Pioneer sound.vision.soul

PION-06234

Service Manual

ORDER NO.
RRV3167

DVD RECORDER

DVR-433H-S
DVR-433H-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Serial No. Piease confirm 3rd & 4th alphabetical letters.
DVR-433H-S	WYXV	AC220-240V	2	&&DL######$$
DVR-433H-K	WYXV	AC220-240V	2	&&DL######$$
DVR-433H-S	WVXV	AC220-240V	2	&&DL######$$
DVR-433H-S	WYXV/RE	AC220-240V	5	&&DL######$$
DVR-433H-K	WYXV/RE	AC220-240V	5	&&DL######$$

● **This service manual should be used together with the following manual(s):**

Model	Order No.	Remarks
DVR-530H-S/WYXV	RRV3149	

CONTENTS

1. CONTRAST OF MISCELLANEOUS PARTS 2
2. SCHEMATIC DIAGRAM 6
3. PCB CONNECTION DIAGRAM 16
4. GENERAL INFORMATION 18
   4.1 MODEL TYPE SETTING 18

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

©PIONEER CORPORATION 2005

T – ZZV MAY. 2005

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PU [5][6][1] J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU [4][7][3] J
0.5 Ω → R50 ..... RN2H [R][5][0] K
1 Ω → 1R0 ..... RS1P [1][R][0] K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC [5][6][2][1] F

■ CONTRAST TABLE

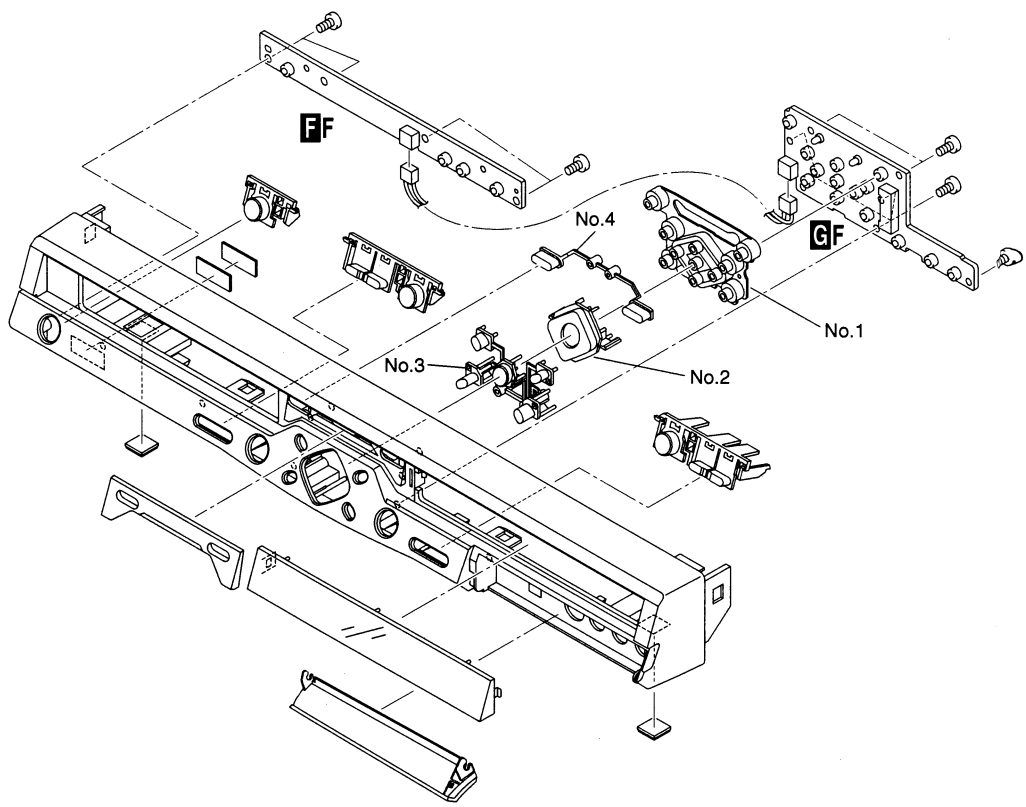
DVR-433H-S/WYXV, /WVXV, /WYXV/RE, DVR-433H-K/WYXV, /WYXV/RE and DVR-530H-S/WYXV are constructed the same except for the following:

Ref. No.	Mark	Symbol and Description	Part No.						Remarks
			DVR-530H-S /WYXV	DVR-433H-S /WYXV	DVR-433H-K /WYXV	DVR-433H-S /WVXV	DVR-433H-S /WYXV/RE	DVR-433H-K /WYXV/RE	
		PCB ASSEMBLIES							
		1..JAFL ASSY (for SERVICE)	VXX3005	VXX3004	VXX3004	VXX3004	VXX3004	VXX3004	
	NSP	2..JAFL ASSY	VWM2315	VWM2314	VWM2314	VWM2314	VWM2314	VWM2314	
P11- 2		3..JACB ASSY	VWV2115	VWV2114	VWV2114	VWV2114	VWV2114	VWV2114	
P11- 6		1..MAIN ASSY (for SERVICE)	VXX2997	VXX2996	VXX2996	VXX2996	VXX2996	VXX2996	
		1..KEYB ASSY (for SERVICE)	VXX3032	VXX3030	VXX3030	VXX3030	VXX3030	VXX3030	
	NSP	2..KEYB ASSY	VWM2332	VWM2330	VWM2330	VWM2330	VWM2330	VWM2330	
P13-1		3..PSWB ASSY	VWG2526	VWG2524	VWG2524	VWG2524	VWG2524	VWG2524	
P13-2		3..RSWB ASSY	VWG2530	VWG2528	VWG2528	VWG2528	VWG2528	VWG2528	
		PACKING SECTION							
P9- 1	⚠	AC Power Cord	ADG7090	ADG7090	ADG7090	ADG7103	ADG7090	ADG7090	
P9- 4		Remote Control Unit	VXX2969	VXX3048	VXX3048	VXX3047	VXX3048	VXX3048	
P9- 5		Battery Cover	AZN7933	VNK4998	VNK4998	VNK4998	VNK4998	VNK4998	
P9- 7		IR Blaster	VDX1010	Not used	Not used	Not used	Not used	Not used	
P9-11		Operating Instructions (English)	Not used	Not used	Not used	VRB1379	Not used	Not used	
P9-12		Operating Instructions (French)	VRC1251	VRC1263	VRC1263	Not used	Not used	Not used	
P9-13		Operating Instructions (German)	VRC1252	VRC1262	VRC1262	Not used	Not used	Not used	
P9-14		Operating Instructions (Italian)	VRC1253	VRC1261	VRC1261	Not used	Not used	Not used	
P9-15		Operating Instructions (Spanish)	VRC1255	VRC1264	VRC1264	Not used	Not used	Not used	
P9-16		Operating Instructions (Dutch)	VRC1254	VRC1265	VRC1265	Not used	Not used	Not used	
P9-17		Dual Layer IM (English)	Not used	Not used	Not used	VRB1392	Not used	Not used	
P9-18		Dual Layer IM (French)	VRC1280	VRC1280	VRC1280	Not used	Not used	Not used	
P9-19		Dual Layer IM (German)	VRC1281	VRC1281	VRC1281	Not used	Not used	Not used	
P9-20		Dual Layer IM (Italian)	VRC1282	VRC1282	VRC1282	Not used	Not used	Not used	
P9-21		Dual Layer IM (Spanish)	VRC1283	VRC1283	VRC1283	Not used	Not used	Not used	
P9-22		Dual Layer IM (Dutch)	VRC1284	VRC1284	VRC1284	Not used	Not used	Not used	
		Operating Instructions (Russian)	Not used	Not used	Not used	Not used	VRC1278	VRC1278	
		Dual Layer IM (Russian)	Not used	Not used	Not used	Not used	VRC1285	VRC1285	
P9-24	NSP	User Card	VRY1158	VRY1158	VRY1158	Not used	Not used	Not used	
P9-25	NSP	Polyethylene Bag (A4x2)	VHL1091	VHL1091	VHL1091	Not used	Not used	Not used	
P9-30		Packing Case	VHG2600	VHG2602	VHG2631	VHG2632	VHG2648	VHG2649	
		EXTERIOR SECTION							
P11- 9		HDD160G WD1600BBGUCS	VXF1068	Not used	Not used	Not used	Not used	Not used	
P11- 9		HDD80G WD800BBJKC S	Not used	VXF1066	VXF1066	VXF1066	VXF1066	VXF1066	
P11-28		Bonnet Case S	VXX3039	VXX3039	VXX3042	VXX3039	VXX3039	VXX3042	
P11-29		Rear Panel	VNA2772	VNA2795	VNA2799	VNA2795	VNA2818	VNA2819	
P11-38		Pioneer Name Plate	VAM1148	VAM1148	VAM1153	VAM1148	VAM1148	VAM1153	

Ref. No.	Mark	Symbol and Description	Part No.						Remarks
			DVR-530H-S /WYXV	DVR-433H-S /WYXV	DVR-433H-K /WYXV	DVR-433H-S /WVXV	DVR-433H-S /WYXV/RE	DVR-433H-K /WYXV/RE	
P11-40		Tray Panel EB	VNK5715	Not used	Not used	Not used	Not used	Not used	
P11-40		Tray Panel A	Not used	VNK5703	VNK5703	VNK5703	VNK5703	VNK5703	
P11-41		Bonnet Label	VRW2172	VRW2173	VRW2185	VRW2176	VRW2173	VRW2185	
P11-46		Screw (FE)	VBA1104	VBA1104	Not used	VBA1104	VBA1104	Not used	
P11-46		Screw B (FE)	Not used	Not used	VBA1105	Not used	Not used	VBA1105	
P11-53		Screw	BSZ30P060FTC	BSZ30P060FTC	BSZ30P060FBN	BSZ30P060FTC	BSZ30P060FTC	BSZ30P060FBN	
		FRONT PANEL SECTION							
P13- 3		Housing Ass'y (3P)	VKP2359	VKP2360	VKP2360	VKP2360	VKP2360	VKP2360	
P13- 5		FL Lens E	VNK5706	Not used	Not used	Not used	Not used	Not used	
P13- 5		FL Lens A	Not used	VNK5698	VNK5698	VNK5698	VNK5698	VNK5698	
P13- 6		Main Key E1	VNK5707	Not used	Not used	Not used	Not used	Not used	
P13- 6		Main Key A	Not used	VNK5701	VNK5822	VNK5701	VNK5701	VNK5822	
P13- 7		Center Lens E	VNK5713	Not used	Not used	Not used	Not used	Not used	
P13- 7		Center Lens AC	Not used	VNK5699	VNK5699	VNK5699	VNK5699	VNK5699	
P13- 8		Front Panel E	VNK5763	Not used	Not used	Not used	Not used	Not used	
P13- 8		Front Panel A	Not used	VNK5826	VNK5820	VNK5826	VNK5826	VNK5820	
P13- 9		Door E	VNK5708	Not used	Not used	Not used	Not used	Not used	
P13- 9		Door A	Not used	VNK5827	VNK5821	VNK5828	VNK5827	VNK5821	
P13-10		Center Panel EB2	VNK5714	Not used	Not used	Not used	Not used	Not used	
		Rubber Hindge	Not used	VEB1371	VEB1371	VEB1371	VEB1371	VEB1371	No.1
		Cursol Key	Not used	VNK5695	VNK5823	VNK5695	VNK5695	VNK5823	No.2
		Enter Key	Not used	VNK5696	VNK5824	VNK5696	VNK5696	VNK5824	No.3
		Eject Key A	Not used	VNK5697	VNK5825	VNK5697	VNK5697	VNK5825	No.4

Notes : • For PCB ASSEMBLIES, Refer to "CONTRAST OF PCB ASSEMBLIES", "2. SCHEMATIC DIAGRAM" and "3. PCB CONNECTIONDIAGRAM".
• The numbers in the remarks column correspond to the numbers on "FRONT PANEL SECTION".

● FRONT PANEL SECTION



● CONTRAST OF PCB ASSEMBLIES

BF JACB ASSY

VWV2114 and VWV2115 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		VWV2115	VWV2114	
	Q107	2SA1576A	Not used	
	Q112	2SC4081	Not used	
	Q415, Q416	Not used	2SA1576A	
	Q417	Not used	2SC4081	
	L103	VTL1081	Not used	
	C124	CEAT101M10	Not used	
	C163	CKSRYF104Z25	Not used	
	C164 - C166	CCSRCH101J50	Not used	
	C475, C479	Not used	CKSRYF104Z25	
	C476, C477, C480, C481	Not used	CKSRYB105K6R3	
	C478, C482	Not used	CCSRCH101J50	
	R107	RS1/16S0R0J	Not used	
	R109	RS1/16S151J	Not used	
	R110, R184	RS1/16S102J	Not used	
	R185 - R187	RS1/16S472J	Not used	
	R233	RS1/16S104J	Not used	
	R440, R451, R455	Not used	RS1/16S0R0J	
	R449 ,R452, R453, R456	Not used	RS1/16S104J	
	R450, R454	Not used	RS1/16S473J	
	R457	Not used	RS1/16S103J	
	R458, R459	Not used	RS1/16S222J	
	R460, R461	Not used	RS1/16S472J	
	JA101 (MINI JACK)	AKN1073	Not used	

HF MAIN ASSY

VXX2996 and VXX2997 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		VXX2997	VXX2996	
	IC3401	PDF015A	Not used	
	C3401	CKSSYF104Z16	Not used	
	C3404	CKSQYB106K6R3	Not used	
	R3021, R3401, R3404 - R3406	RS1/16SS0R0J	Not used	
	R3025	Not used	RS1/16SS0R0J	
	R3402	RS1/10S0R0J	Not used	
	R3403	RS1/16SS105J	Not used	
	R3407	RS1/16SS473J	Not used	
	X3401 (16MHz)	CSS1616	Not used	

■ PCB PARTS LIST

Mark	No.	Description	Part No.

FF PSWB ASSY

SWITCHES AND RELAYS

S1212, S1213, S1405, S1406		VSG1024

RESISTORS

Other Resistors		RS1/16S###J

OTHERS

CN1101	CONNECTOR POST	S3B-PH-K

GF RSWB ASSY

SEMICONDUCTORS

Q1202, Q1203		DTC124EUA
D1207		SLR-343BBT
D1203		SLR-343DC

SWITCHES AND RELAYS

S1201-S1206, S1208-S1211		VSG1024
S1401-S1404		VSG1024

CAPACITORS

C1201, C1202, C1204-C1206		CKSRYF104Z25
C1403, C1404		CKSRYF104Z25

RESISTORS

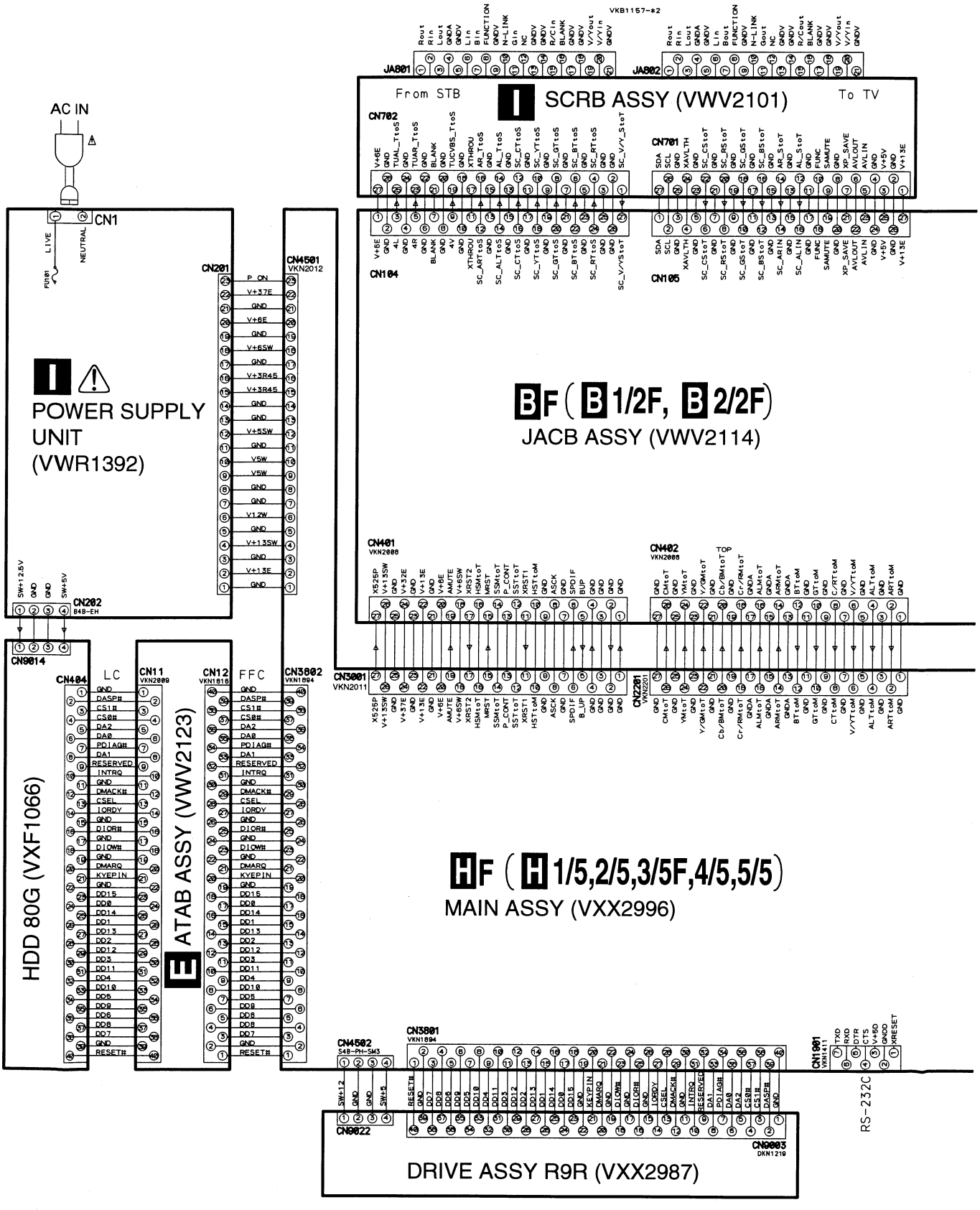
Other Resistors		RS1/16S###J

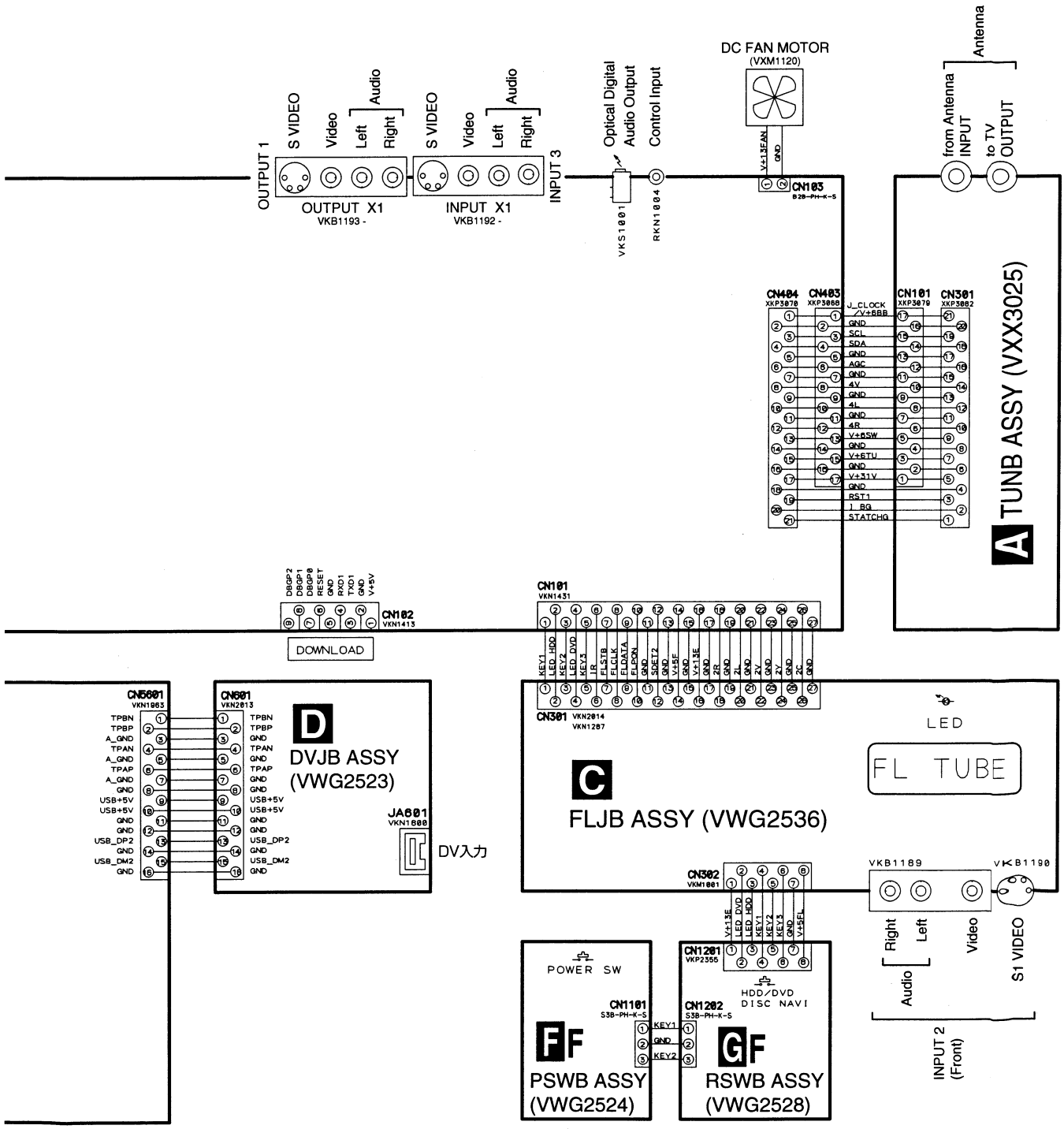
OTHERS

CN1202	CONNECTOR POST	S3B-PH-K
CN1201	CONNECTOR	VKP2355

2. SCHEMATIC DIAGRAM

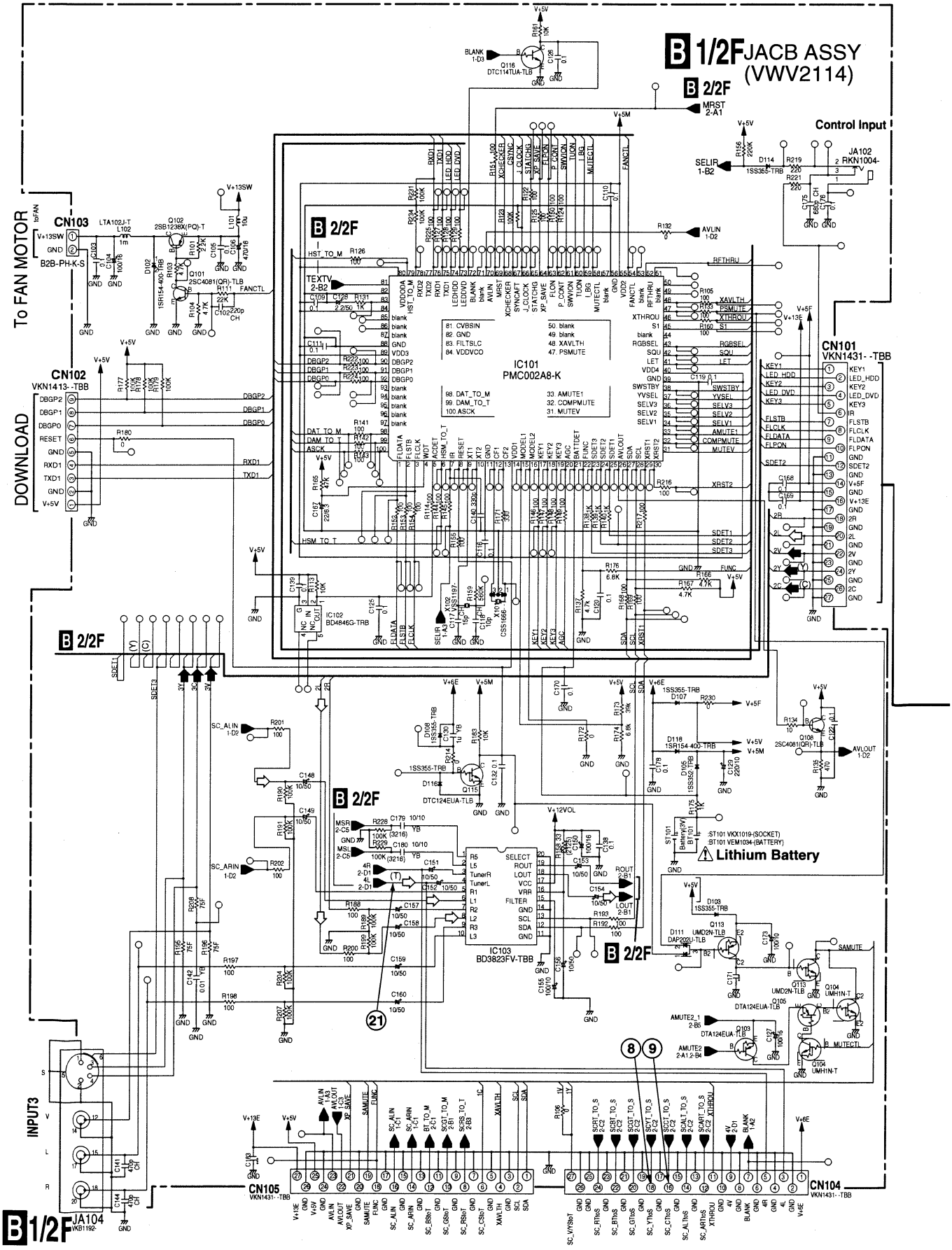
2.1 OVERALL WIRING DIAGRAM





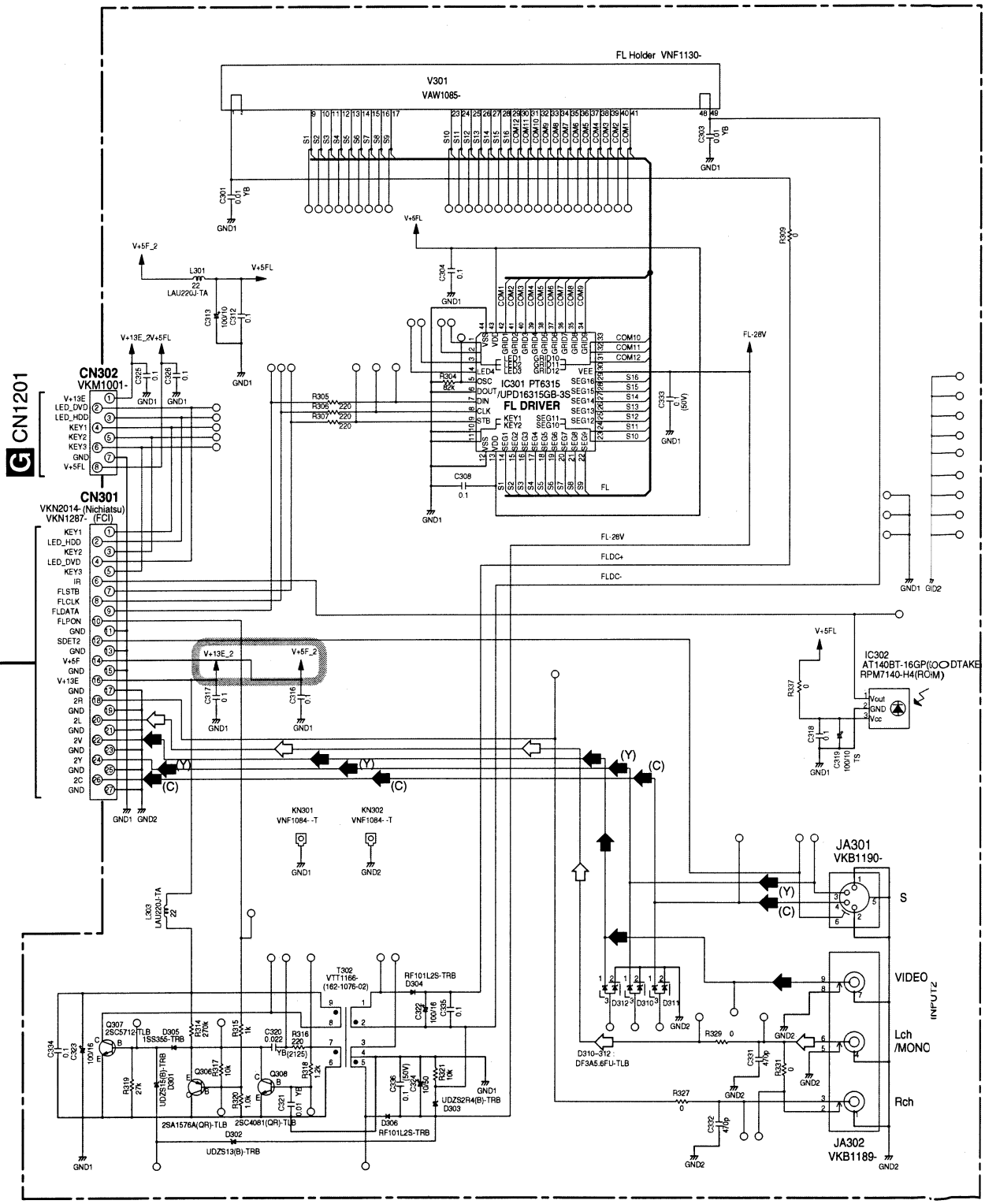
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.

2.2 JACB ASSY(1/2)



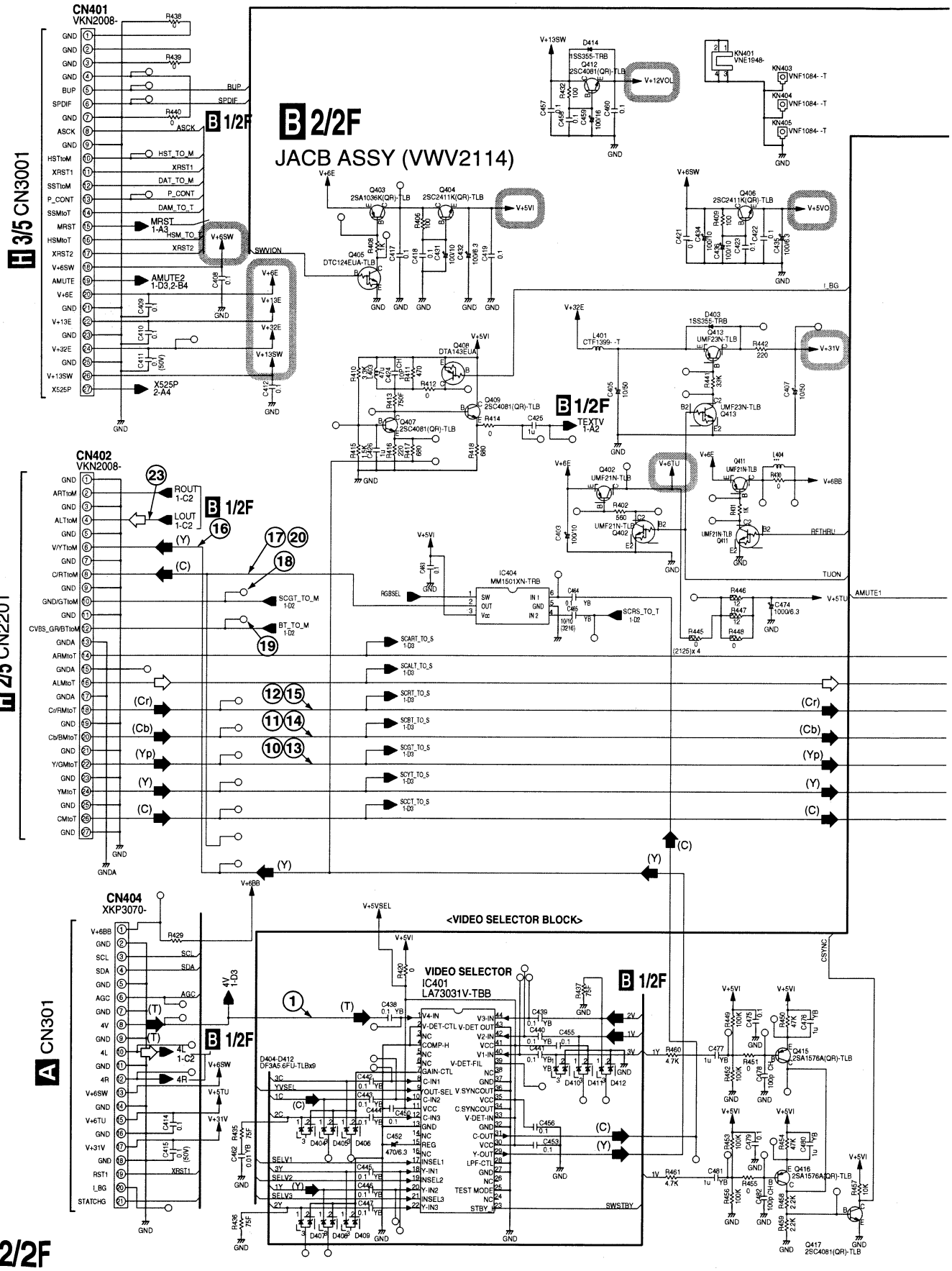
: Video Signal Route
(Y) : Y Video Signal Route
(C) : C Video Signal Route
: AUDIO SIGNAL ROUTE (L ch)
(T) : AUDIO SIGNAL ROUTE (TUNER L ch)

C FLJB ASSY (VWG2536)



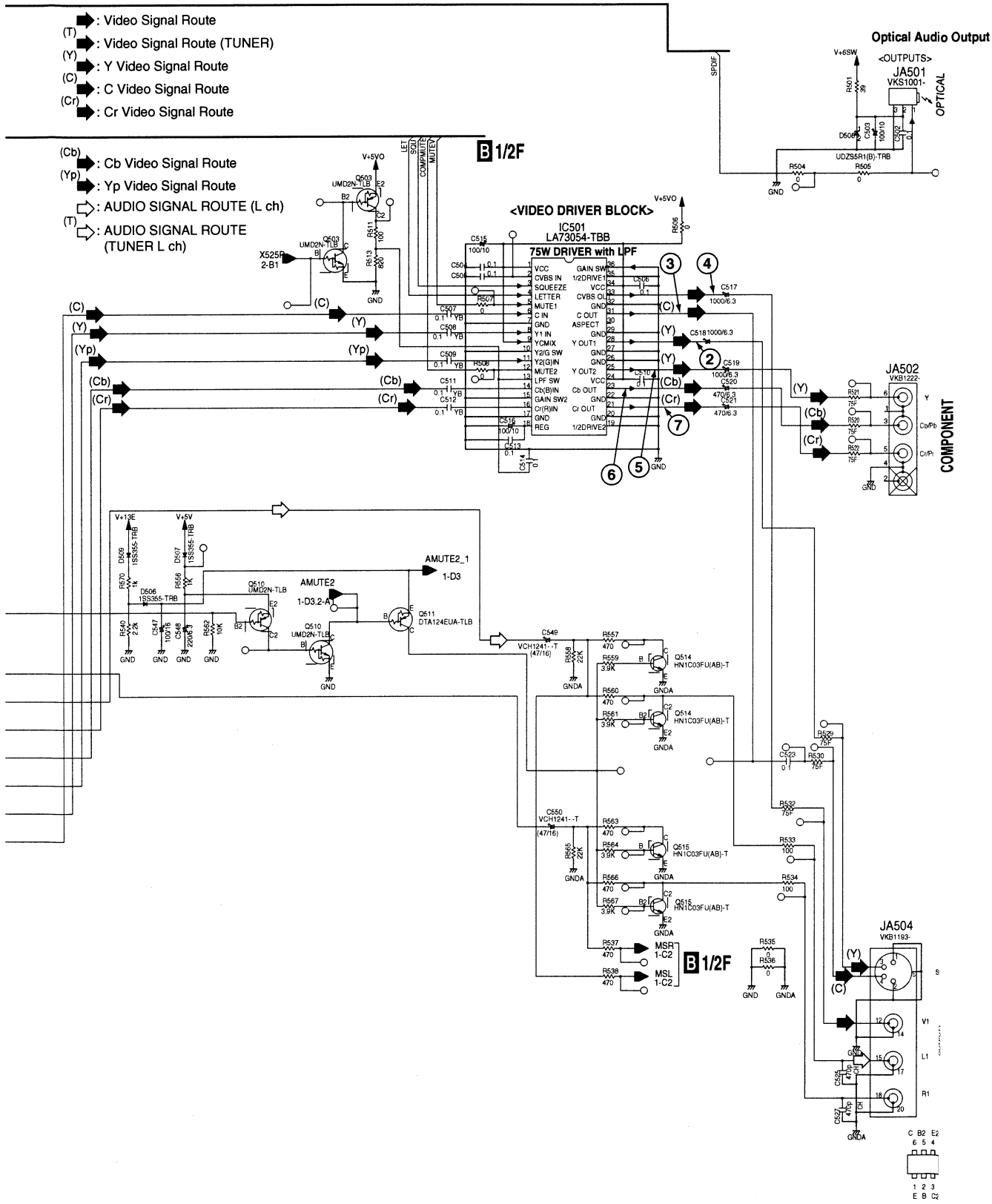
B 1/2F C

2.3 JACB ASSY(2/2)



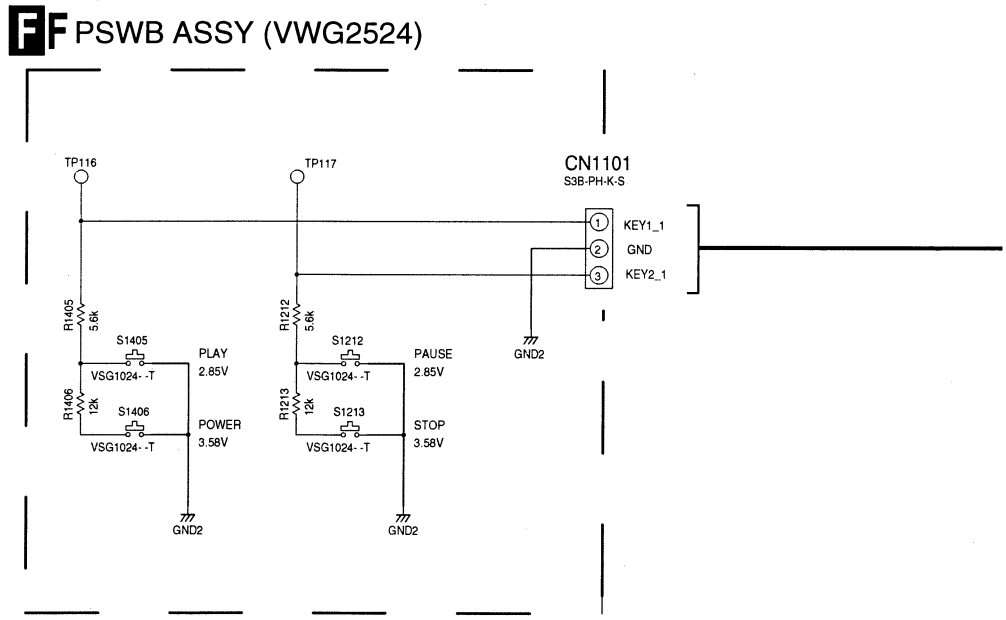
(Video) : Video Signal Route
(T) : Video Signal Route (TUNER)
(Y) : Y Video Signal Route
(C) : C Video Signal Route
(Cr) : Cr Video Signal Route

(Cb) : Cb Video Signal Route
(Yp) : Yp Video Signal Route
: AUDIO SIGNAL ROUTE (L ch)
(T) : AUDIO SIGNAL ROUTE (TUNER L ch)



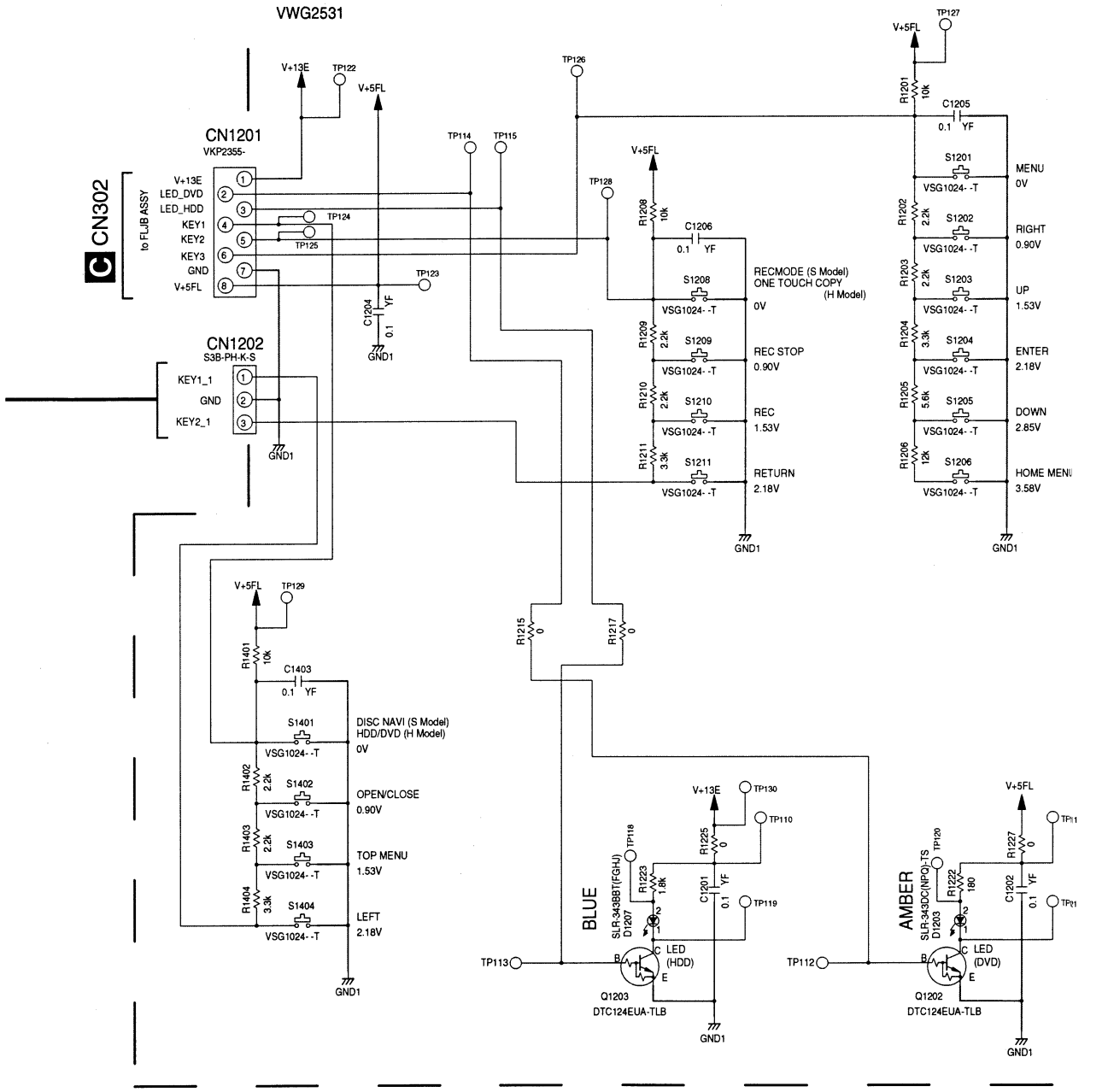
2.4 PSWB and RSWB ASSYS

Switches
S1212:PAUSE
S1213:STOP
S1405:PLAY
S1406:POWER



GF RSWB ASSY (VWG2528)

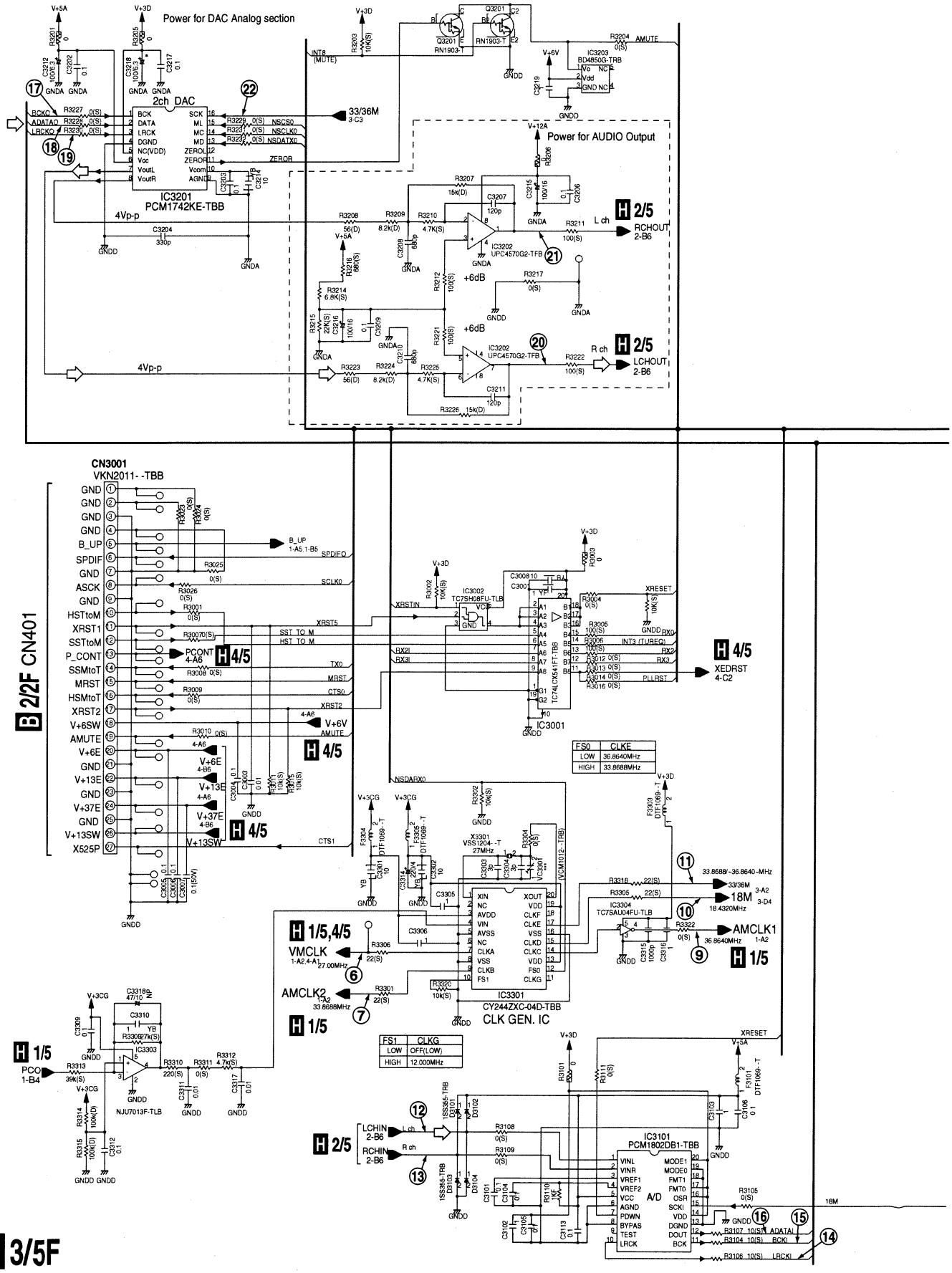
RSWB ASSY
VWG2528
VWG2531



Switches

S1201:MENU
S1202:RIGHT
S1203:UP
S1204:ENTER
S1205:DOWN
S1206:HOME MENU
S1208:ONE TOUCH COPY
S1209:REC STOP
S1210:REC
S1211:RETURN
S1401:HDD/DVD
S1402:OPEN/CLOSE
S1403:TOP MENU
S1404:LEFT

2.5 MAIN ASSY(3/5)



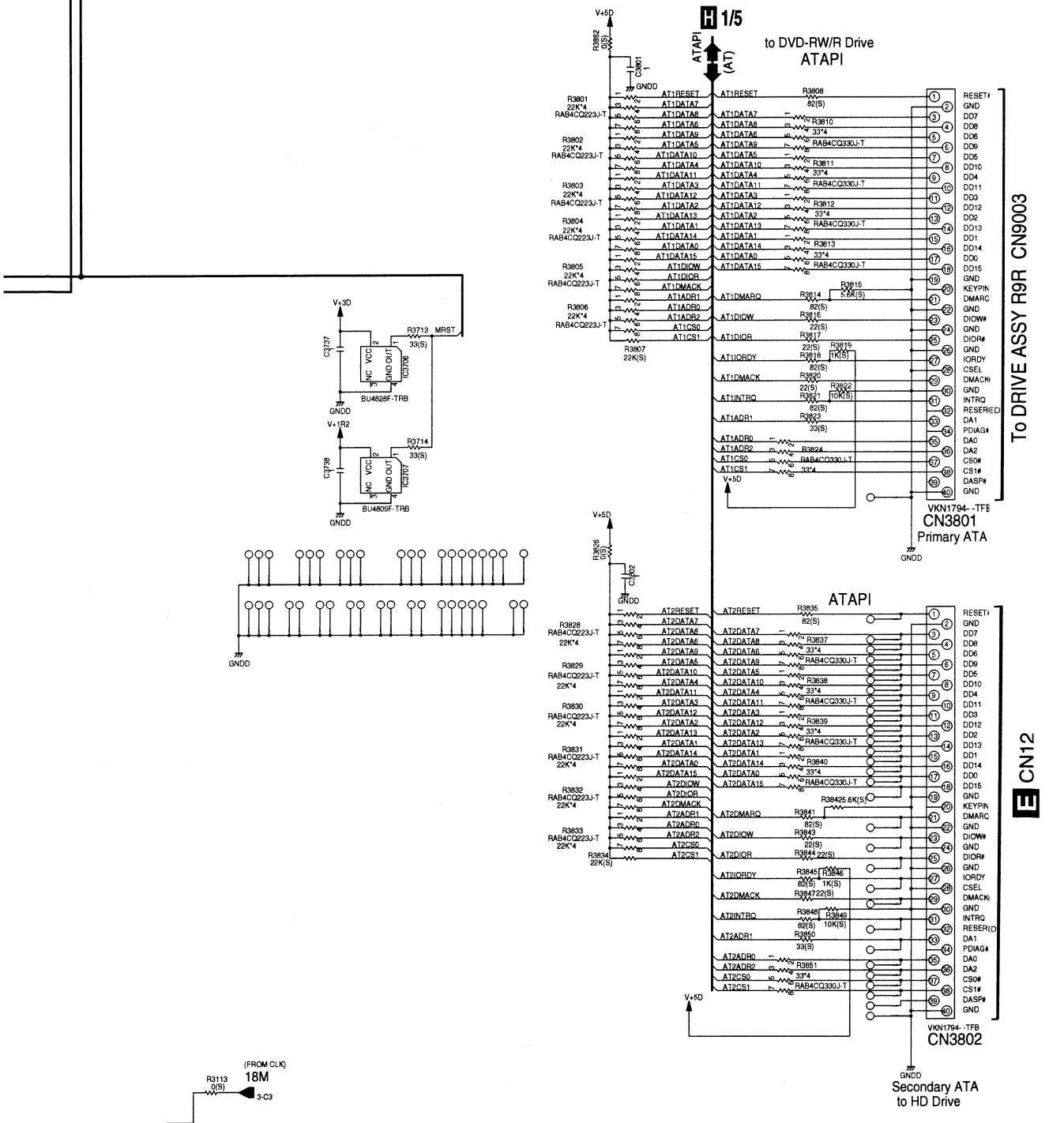
H 3/5F MAIN ASSY (VXX2996)

(AT) ➡: ATAPI Data Signal Route

⇨: Audio Signal Route (L ch)

CPU CONTROL BUS H 1/5

DAC/ADC



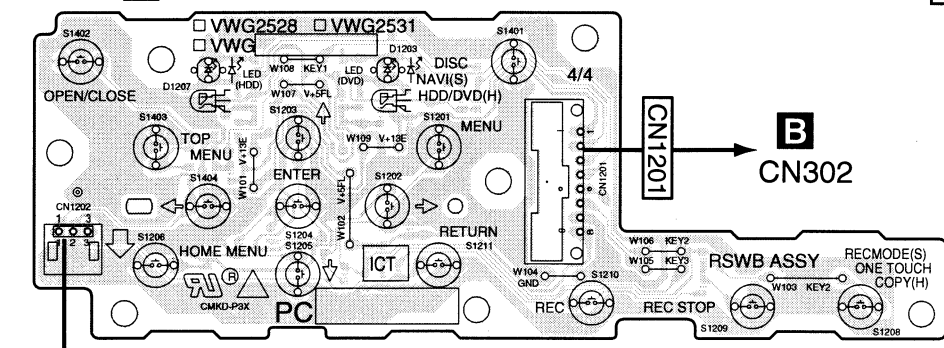
3. PCB CONNECTION DIAGRAM

3.1 PSWB and RSWB ASSYS

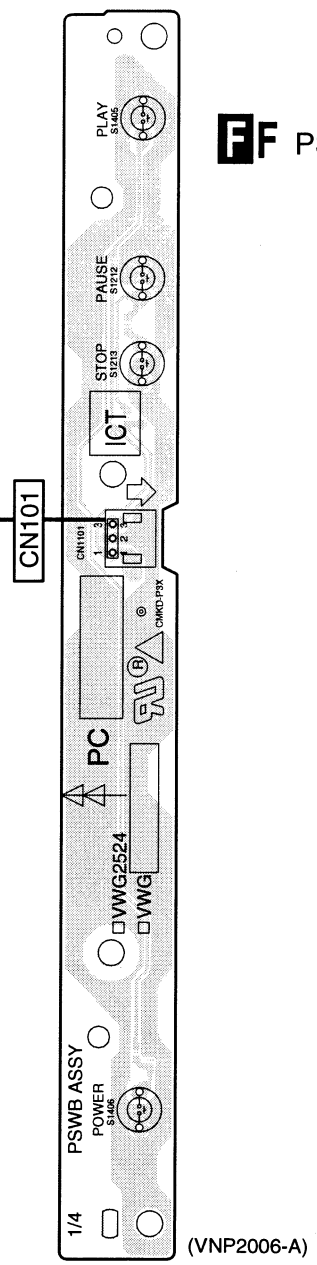
SIDE A

GF RSWB ASSY

SIDE A



CN1202



FF PSWB ASSY

FF GF

FF GF

4. GENERAL INFORMATION

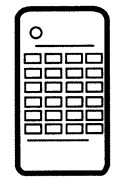
4.1 MODEL TYPE SETTING

[Purposes]

When the MAIN Assy and/or TUJB Assy that are(is) commonly used with another model are(is) replaced, they(it) must recognize the model of this unit.

Items to be set: The model number, destination, and region No. must be set.

[Tool to be used]



Remote control unit for servicing
(GGF1381)

[Notes]

- Once the setting has been made, it can never be changed. Be sure to make the setting correctly.
- As this setting resets the Assy(s) in question to the factory-preset status, it is recommended that you obtain the customer's consent beforehand.

[Procedures]

① After power on, the following screen is displayed on TV monitor. Press four digits properly (for example " 2401 ") by using the remote control unit for service, according to the screen information.

```
[Recorder's Model Setting]
 Input the number using the remote for Service.

>- - -

 Input No.    Model          **   Destination
[ 22**  :  DVR-530H  ] [ 01 :  /WY        ]
[ 23**  :  DVR-630H  ] [ 02 :  /WV        ]
[ 24**  :  DVR-433H  ] [ 03 :  /WY/RE     ]
                       [ 04 :  /WY/GR     ]
                       [ 05 :  /WY/SP     ]
```

② Disconnect then reconnect the AC power cord of the unit. Be careful not to impart vibration to the unit immediately after the AC power cord is disconnected.

③ Reset the recorder to all its factory settings.
(Make sure that the recorder is on. Press and hold ■ (STOP) key and press ⏻ (STANDBY/ON) key on the front panel.)
The recorder turns off with all settings reset.

④ Press [ESC] then [DISP] keys by using the remote control unit for servicing, and then confirm each Model Name (for example " DVR-433H/WY ").

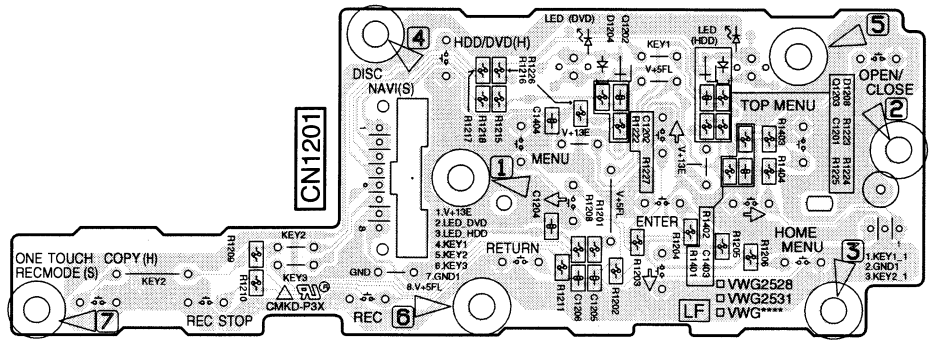
```
DVR-433H/WY       VERSION : 4.**
  SYSCON  : RELEASE_166
            Rev    :1.10357.2.43
TUNERCON  : 835.000                  OK
    DRIVE : DVD-RW DVR-R09R          OK
            1.52                     OK
            DLDL000946WL             OK

      HDD : WDC WD800BB-xxJKCx       80
   DEVICE : PRISM2-ES2
   REGION : 2
        C : *********
    FLASH : 64M
```

⑤ End

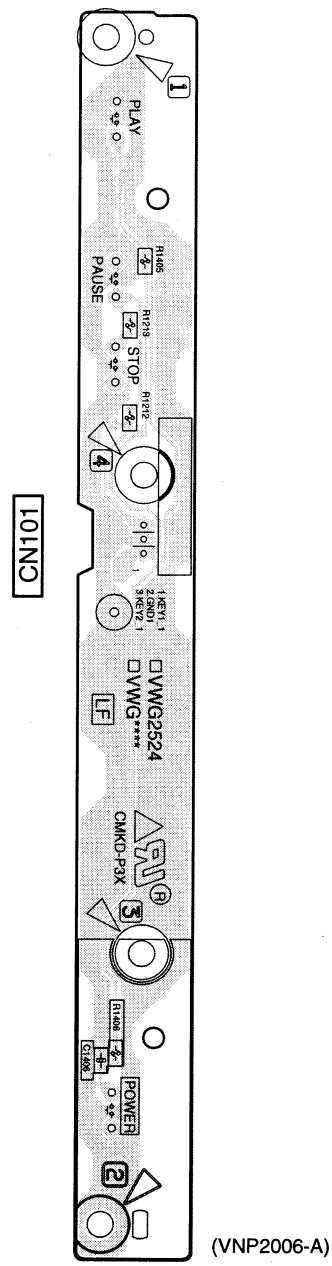
SIDE B

SIDE B

GF RSWB ASSY



FF PSWB ASSY



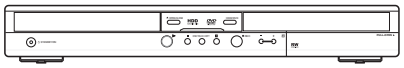
(VNP2006-A)

FF GF

FF GF

Pioneer sound.vision.soul

Service Manual



DVR-530H-S

ORDER NO.
RRV3149

DVD RECORDER

DVR-530H-S
DVR-530H-AV
DVR-630H-S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Serial No. Please confirm 3rd & 4th alphabetical letters.
DVR-530H-S	WYXV	AC220-240V	2	&&DL######$$
DVR-530H-S	WVXV	AC220-240V	2	&&DL######$$
DVR-530H-AV	WYXV	AC220-240V	2	&&DL######$$
DVR-530H-AV	WVXV	AC220-240V	2	&&DL######$$
DVR-630H-S	WYXV	AC220-240V	2	&&DL######$$
DVR-630H-S	WVXV	AC220-240V	2	&&DL######$$

- **When servicing this model, some service procedures may reset the customer settings to the factory default settings. Make sure to explain this to the customer.**

An HDD (Hard Disc Drive) is mounted in this product.
The HDD is a precision instrument very vulnerable to shock and electrostatic charges. Please read "7.3 Cautions on Handling the HDD" in this manual and exercise sufficient caution when handling the HDD itself, as well as the product with the HDD built in.
When an HDD becomes defective and inoperable, restoration of the user's data recorded on the HDD, or copying of the user's recorded data to other media (such as a new HDD) is totally impossible. Before servicing, OBTAIN THE USER'S PRIOR CONSENT to that effect.
The user must be made aware that all recorded data are deleted if the HDD is intialized.

For details, refer to "Important Check Points for Good Servicing" .

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2005**

T-ZZV MAY 2005 printed in Japan

SAFETY INFORMATION

LITHIUM BATTERY NOTICE

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

When replacing the lithium batteries, follow the note below. Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note : The lithium battery installation position is shown in the exploded views.

■ LABEL CHECK

IMPORTANT

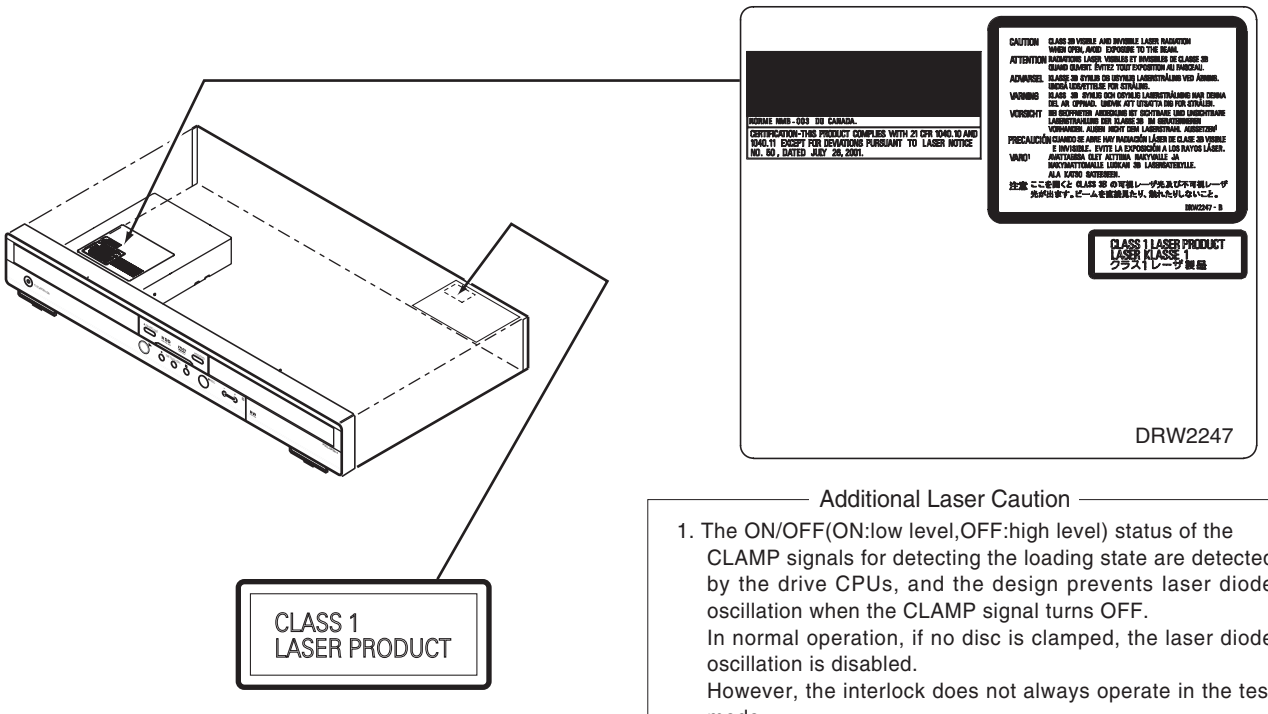
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 100 mW
WAVELENGTH: 654 - 662 nm

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mW
WAVELENGTH: 770 - 810 nm



Additional Laser Caution

1. The ON/OFF(ON:low level,OFF:high level) status of the CLAMP signals for detecting the loading state are detected by the drive CPUs, and the design prevents laser diode oscillation when the CLAMP signal turns OFF.
   In normal operation, if no disc is clamped, the laser diode oscillation is disabled.
   However, the interlock does not always operate in the test mode.

2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 3A laser beam.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION 2
1. SPECIFICATIONS 5
2. EXPLODED VIEWS AND PARTS LIST 8
2.1 PACKING 8
2.2 EXTERIOR SECTION 10
2.3 FRONT PANEL SECTION 12
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM 14
3.1 BLOCK DIAGRAM 14
3.1.1 OVERALL BLOCK DIAGRAM 14
3.1.2 MAIN ASSY 16
3.2 OVERALL WIRING DIAGRAM 18
3.3 TUNB ASSY 20
3.4 JACB(1/2) and FLJB ASSYS 22
3.5 JACB ASSY(2/2) 24
3.6 DVJB ASSY 26
3.7 ATAB ASSY 27
3.8 PSWB and RSWB ASSYS 28
3.9 MAIN ASSY(1/5) 30
3.10 MAIN ASSY(2/5) 32
3.11 MAIN ASSY(3/5) 34
3.12 MAIN ASSY(4/5) 36
3.13 MAIN ASSY(5/5) 38
3.14 SCRB ASSY 40
3.15 POWER SUPPLY UNIT 42
3.16 WAVE FORMS 44
4. PCB CONNECTION DIAGRAM 48
4.1 TUNB ASSY 49
4.2 JACB, FLJB, DVJB and ATAB ASSYS 52
4.3 PSWB and RSWB ASSYS 56
4.4 MAIN ASSY 60
4.5 SCRB ASSY 64
4.6 POWER SUPPLY UNIT 66
5. PCB PARTS LIST 68
6. ADJUSTMENT 72
7. GENERAL INFORMATION 73
7.1 DIAGNOSIS 73
7.1.1 MODEL TYPE SETTING 75
7.1.2 CPRM ID NUMBER AND DATA SETTING 76
7.1.3 FIRMWARE DOWNLOADING METHOD 80
7.1.4 VIDEO ADJUSTMENT FOR SPECIFIC AREA 83
7.1.5 SERVICE MODE 87
7.1.6 DV SERVICE MODE 101
7.1.7 EPG SERVICE MODE (Except DVR-433H model) 104
7.1.8 AGING MODE 106
7.1.9 HDD CHECK MODE 108
7.1.10 SETUP SEQUENCE 114
7.1.11 DISASSEMBLY 115
7.2 IC 121
7.3 CAUTIONS ON HANDLING THE HDD 134
7.4 DISC/CONTENT FORMAT 136
8. PANEL FACILITIES 138

1. SPECIFICATIONS

Specifications

General

System. . . . . HDD, DVD-Video, DVD-R/RW, Video-CD, Super VCD, CD, CD-R/RW (WMA, MP3, JPEG, CD-DA)
Power requirements . . . . . 220 – 240 V, 50/60 Hz
Power consumption
DVR-630H . . . . . .49 W
DVR-530H . . . . . .48 W
Power consumption in standby mode . . . . . 0.93 W (Front panel display: off)
Weight . . . . . 4.1 kg
Dimensions . . . . . 420 (W) x 59 (H) x 273 (D) mm
Operating temperature . . . . . +5°C to +35°C
Operating humidity . . . . . 5% to 85% (no condensation)
TV system . . . . . PAL/SECAM/NTSC (external input only)

Recording

Recording format . . . . . DVD Video Recording DVD-VIDEO

Recordable discs

DVD-RW (DVD Re-recordable disc)
DVD-R (DVD Recordable disc)

Video recording format

Sampling frequency 13.5MHz
Compression format . . . . . .MPEG

Audio recording format

Sampling frequency. 48kHz
Compression format . . . . . .Dolby Digital or Linear PCM (uncompressed)

Recording time

HDD (250GB)

XP+ . . . . . .Approx. 36 hours
Fine (XP) . . . . . .Approx. 53 hours
Standard Play (SP) . . . . . Approx. 106 hours
Long Play (LP). . . . . Approx. 212 hours
Extended Play (EP) . . . . . .Approx. 319 hours
Super Long Play (SLP) . . . . . Approx. 425 hours
Super Extended Play (SEP) . . . . . Approx. 532 hours
Manual Mode (MN) . . . . . Approx. 36 – 711 hours

HDD (160GB)

XP+ . . . . . .Approx. 23 hours
Fine (XP) . . . . . .Approx. 34 hours
Standard Play (SP) . . . . . Approx. 68 hours
Long Play (LP). . . . . .Approx. 136 hours
Extended Play (EP) . . . . . Approx. 204 hours
Super Long Play (SLP) . . . . . .Approx. 272 hours
Super Extended Play (SEP) . . . . . Approx. 340 hours
Manual Mode (MN) . . . . . Approx. 23 – 455 hours

DVD-R/DVD-RW

Fine (XP) . . . . . Approx. 1 hour
Standard Play (SP) . . . . . Approx. 2 hours
Long Play (LP) . . . . . Approx. 4 hours
Extended Play (EP) . . . . . Approx. 6 hours
Super Long Play (SLP) . . . . . Approx. 8 hours
Super Extended Play (SEP). . . . . Approx. 10 hours
Manual Mode (MN) . . . . . Approx. 1 – 13 hours

Tuner

Receivable channels

	SECAM B/G PAL B/G		PAL I	
	Frequency	Channel	Frequency	Channel
VHF (low)	47 - 89 MHz	E2 - E4 X - Z	44 - 89 MHz	A - C X - Z
VHF (high)	104 - 300 MHz	E5 - E12 S1 - S20 M1 - M10 U1 - U10	104 - 300 MHz	D - J 11, 13 S1 - S20
Hyper	302 - 470 MHz	S21 - S41	302 - 470 MHz	S21 - S41
UHF	470 - 862 MHz	E21 - E69	470 - 862 MHz	E21 - E69

	SECAM L		SECAM D/K PAL D/K	
	Frequency	Channel	Frequency	Channel
VHF (low)	49 - 65 MHz	FB, FC1, FC	49 - 94 MHz	R1 - R5
VHF (high)	104 - 300 MHz	F1 - F6 B - Q	104 - 300 MHz	R6 - R12 S1 - S20
Hyper	300 - 470 MHz	S21 - S41	302 - 470 MHz	S21 - S41
UHF	470 - 862 MHz	21 - 69	470 - 862 MHz	E21 - E69

STEREO
B/G - A2
I - NICAM
L - NICAM
B/G - NICAM
D/K - NICAM

Timer

Programs. . . . . 1 month/32 programs
Clock . . . . . Quartz lock (24-hour digital display)
Power off memory . . . . Approx. 5 years (after manufacture)

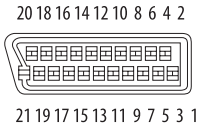
Input/Output

VHF/UHF antenna input/output terminal . . . . . VHF/UHF set 75 Ω (IEC connector)
Video input . . . . . .Input 1,3 (rear), 2 (front)
Input level . . . . . 1 Vp-p (75 Ω)
Jacks . . . . . AV connector 2 (Input 1), RCA jack (Input 2, 3)
Video output . . . . . .AV1, Output
Output level . . . . . .1 Vp-p (75 Ω)
Jacks . . . . . .AV connector (AV1) RCA jack (Output)
S-Video input . . . . . Input 1, 3 (rear), 2 (front)
Y (luminance) - Input level . . . . . .1 Vp-p (75 Ω)
C (colour) - Input level . . . . . .300 mVp-p (75 Ω)
Jacks . . . . . .AV connector 2 (Input 1), 4 pin mini DIN (Input 2, 3)

S-Video output . . . . . AV1, Output
Y (luminance) - Output level. . . . . .1 Vp-p (75 Ω)
C (colour) - Output level . . . . . .300 mVp-p (75 Ω)
Jacks . . . . . AV connector 1 (AV1), 4 pin mini DIN (Output)
Component video output
Output level . . . . . Y: 1.0 Vp-p (75 Ω)
P_B, P_R: 0.7 Vp-p (75 Ω)
Jacks . . . . . RCA jacks
RGB input
Input level . . . . . 0.7 Vp-p (75Ω)
Jacks . . . . . AV connector 2 (Input 1)
RGB output
Output level . . . . . 0.7 Vp-p (75Ω)
Jacks . . . . . AV connector 1 (AV1)
Audio input . . . . . Input 1, 3 (rear), 2 (front) L/R
Input level
During audio input . . . . . 2V rms (Input impedance: more than 22 kΩ)
Jacks . . . . . AV connector 2 (Input 1), RCA jacks (Input 2, 3)
Audio output . . . . . AV1, Output
During audio output . . . . . 2V rms (Output impedance: less than 1.5 kΩ)
Jacks . . . . . AV connector 1 (AV1), RCA jacks (Output)
Control input . . . . . .Mini jack
DV input . . . . . .4 pin (front) (i.LINK/IEEE 1394 standard)
G-LINK™ . . . . . Mini jack

AV Connectors (21-pin connector assignment)

AV connector input/output . . . . . .21-pin connector
This connector provides the video and audio signals for connection to a compatible colour TV or monitor.



PIN no.	AV1(RGB)-TV / AV2(INPUT 1)
1	Audio 2/R out / Audio 2/R out
2	– / Audio 2/R in
11	G out / G in
3	Audio 1/L out / Audio 1/L out
6	– / Audio 1/L in
15	R or C out / R or C in
4	GND
17	GND
7	B out / B in
19	Video out or Y out / Video out
20	– / Video in or Y in
8	Status
21	GND

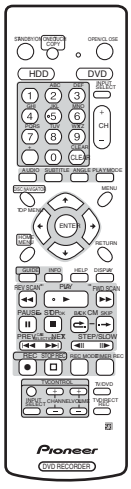
Supplied accessories

Remote control 1
Dry cell batteries (AA/R6P) 2
Audio / Video cable (red/white/yellow) 1
G-LINK™ cable 1
RF antenna cable 1
Power cable 1
Operating Instructions
Warranty card 1

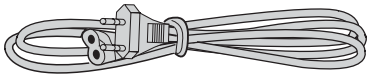
Note: The specifications and design of this product are subject to change without notice, due to improvement.

● Accessories

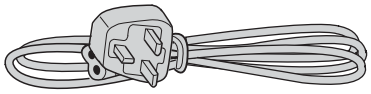
• Remote control ×1
(VXX2969)



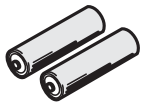
• Power cable ×1
(ADG7090 : WYXV type)



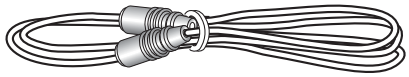
(ADG7103 : WVXV type)



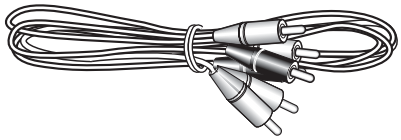
• Dry cell batteries ×2
(AA/R6P)



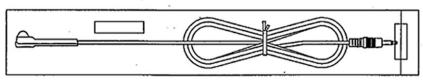
• RF antenna cable(PAL) ×1
(VDE1075)



• Audio / Video cable(1.5m) ×1
(red/white/yellow)
(VDE1077)



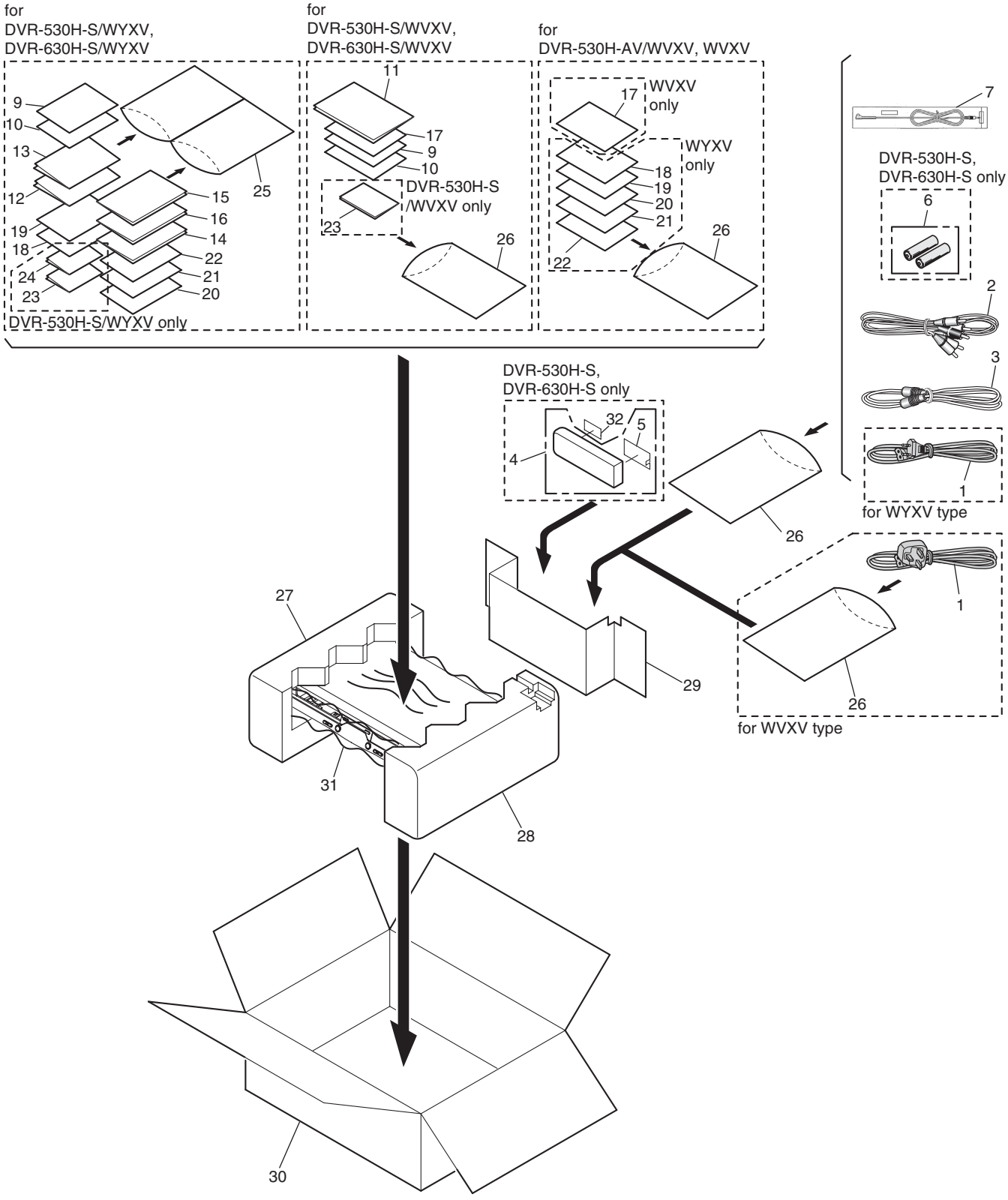
• IR Blaster(3m) ×1
(VDX1010)



2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



(1) PACKING SECTION PARTS LIST

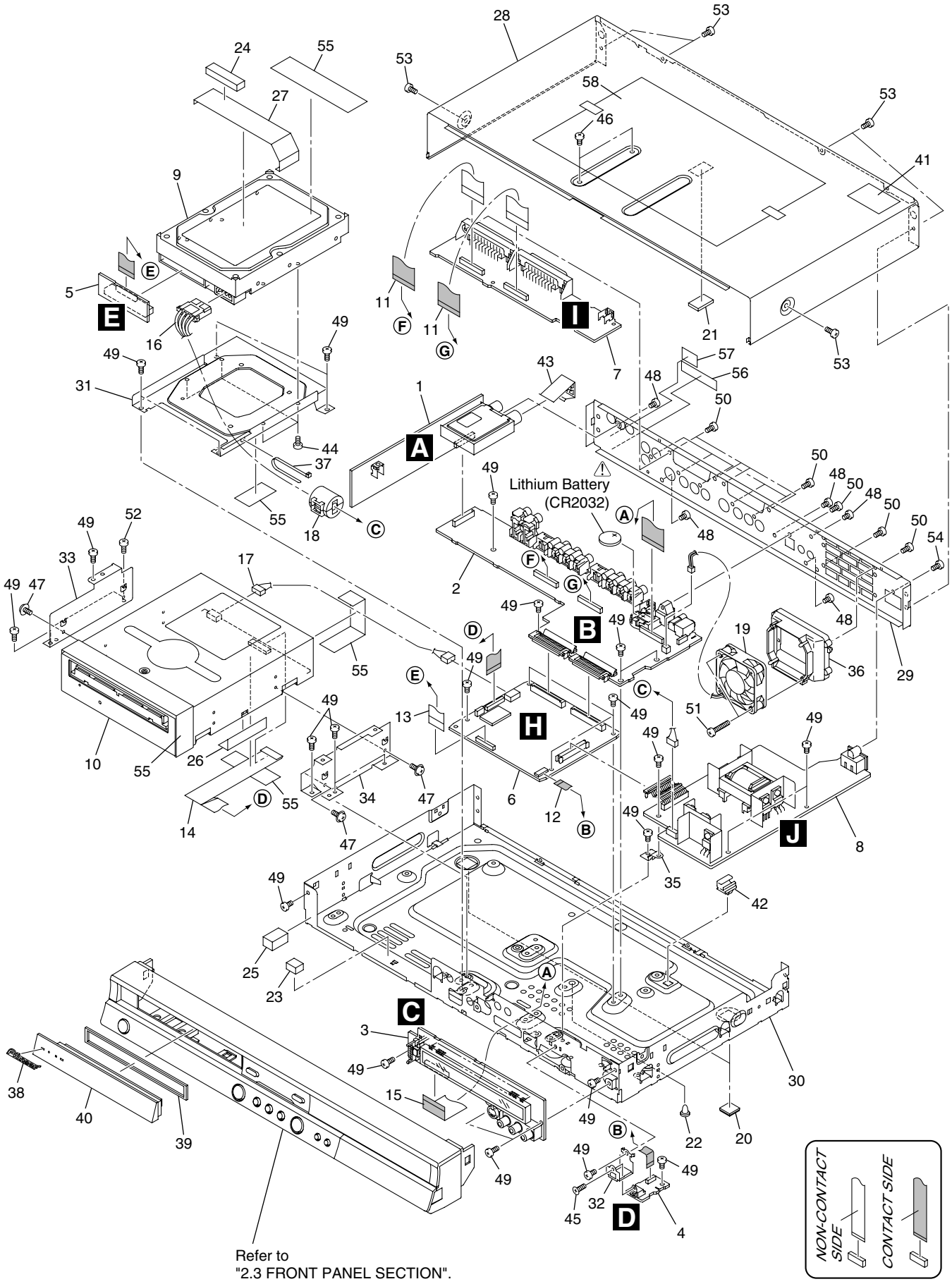
Mark	No.	Description	Part No.
⚠	1	Power Cable	See Contrast table (2)
	2	Audio / Video Cable (1.5m)	VDE1077
	3	RF Antenna Cable	VDE1075
	4	Remote Control Unit	See Contrast table (2)
	5	Battery Cover	See Contrast table (2)
NSP	6	Dry Cell Battery (R6P, AA)	See Contrast table (2)
	7	IR Blaster	VDX1010
NSP	8	Warranty Card	ARY7065
	9	WEEE Caution Card	VRR1065
	10	HDD Caution 8L	VRR1063
	11	Operating Instructions	See Contrast table (2)
	12	Operating Instructions	See Contrast table (2)
	13	Operating Instructions	See Contrast table (2)
	14	Operating Instructions	See Contrast table (2)
	15	Operating Instructions	See Contrast table (2)
	16	Operating Instructions	See Contrast table (2)
	17	Dual Layer IM	See Contrast table (2)
	18	Dual Layer IM	See Contrast table (2)
	19	Dual Layer IM	See Contrast table (2)
	20	Dual Layer IM	See Contrast table (2)
	21	Dual Layer IM	See Contrast table (2)
	22	Dual Layer IM	See Contrast table (2)
NSP	23	User Card	See Contrast table (2)
NSP	24	User Card	See Contrast table (2)
NSP	25	Polyethylene Bag (A4 x2)	See Contrast table (2)
	26	Polyethylene Bag B5	VHL1088
	27	Left Pad	VHA1386
	28	Right Pad	VHA1387
	29	Remote Control Holder	VHC1139
	30	Packing Case	See Contrast table (2)
	31	Mirror Mat	VHL1089
	32	WEEE Label	See Contrast table (2)

(2) CONTRAST TABLE

DVR-530H-S/WYXV, WVXV, DVR-530H-AV/WYXV, WVXV, DVR-630H-S/WYXV and WVXV are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-530H-S /WYXV	DVR-530H-S /WVXV	DVR-530H-AV /WYXV	DVR-530H-AV /WVXV	DVR-630H-S /WYXV	DVR-630H-S /WVXV
⚠	1	Power Cable	ADG7090	ADG7103	ADG7090	ADG7103	ADG7090	ADG7103
	4	Remote Control Unit	VXX2969	VXX2969	Not used	Not used	VXX2969	VXX2969
	5	Battery Cover	AZN7933	AZN7933	Not used	Not used	AZN7933	AZN7933
NSP	6	Dry Cell Battery (R6P, AA)	VEM1030	VEM1030	Not used	Not used	VEM1030	VEM1030
	11	Operating Instructions (English)	Not used	VRB1371	Not used	Not used	Not used	VRB1371
	12	Operating Instructions (French)	VRC1251	Not used	Not used	Not used	VRC1251	Not used
	13	Operating Instructions (German)	VRC1252	Not used	Not used	Not used	VRC1252	Not used
	14	Operating Instructions (Italian)	VRC1253	Not used	Not used	Not used	VRC1253	Not used
	15	Operating Instructions (Dutch)	VRC1254	Not used	Not used	Not used	VRC1254	Not used
	16	Operating Instructions (Spanish)	VRC1255	Not used	Not used	Not used	VRC1255	Not used
	17	Dual Layer IM (English)	Not used	VRB1392	Not used	VRB1392	Not used	VRB1392
	18	Dual Layer IM (French)	VRC1280	Not used	VRC1280	Not used	VRC1280	Not used
	19	Dual Layer IM (German)	VRC1281	Not used	VRC1281	Not used	VRC1281	Not used
	20	Dual Layer IM (Italian)	VRC1282	Not used	VRC1282	Not used	VRC1282	Not used
	21	Dual Layer IM (Spanish)	VRC1283	Not used	VRC1283	Not used	VRC1283	Not used
	22	Dual Layer IM (Dutch)	VRC1284	Not used	VRC1284	Not used	VRC1284	Not used
NSP	23	User Card	VRY1157	VRY1157	Not used	Not used	Not used	Not used
NSP	24	User Card	VRY1158	Not used	Not used	Not used	Not used	Not used
NSP	25	Polyethylene Bag (A4 x2)	VHL1091	Not used	Not used	Not used	VHL1091	Not used
	30	Packing Case	VHG2600	VHG2630	VHG2619	VHG2622	VHG2601	VHG2603
	32	WEEE Label	VRW2231	VRW2231	Not used	Not used	VRW2231	VRW2231

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

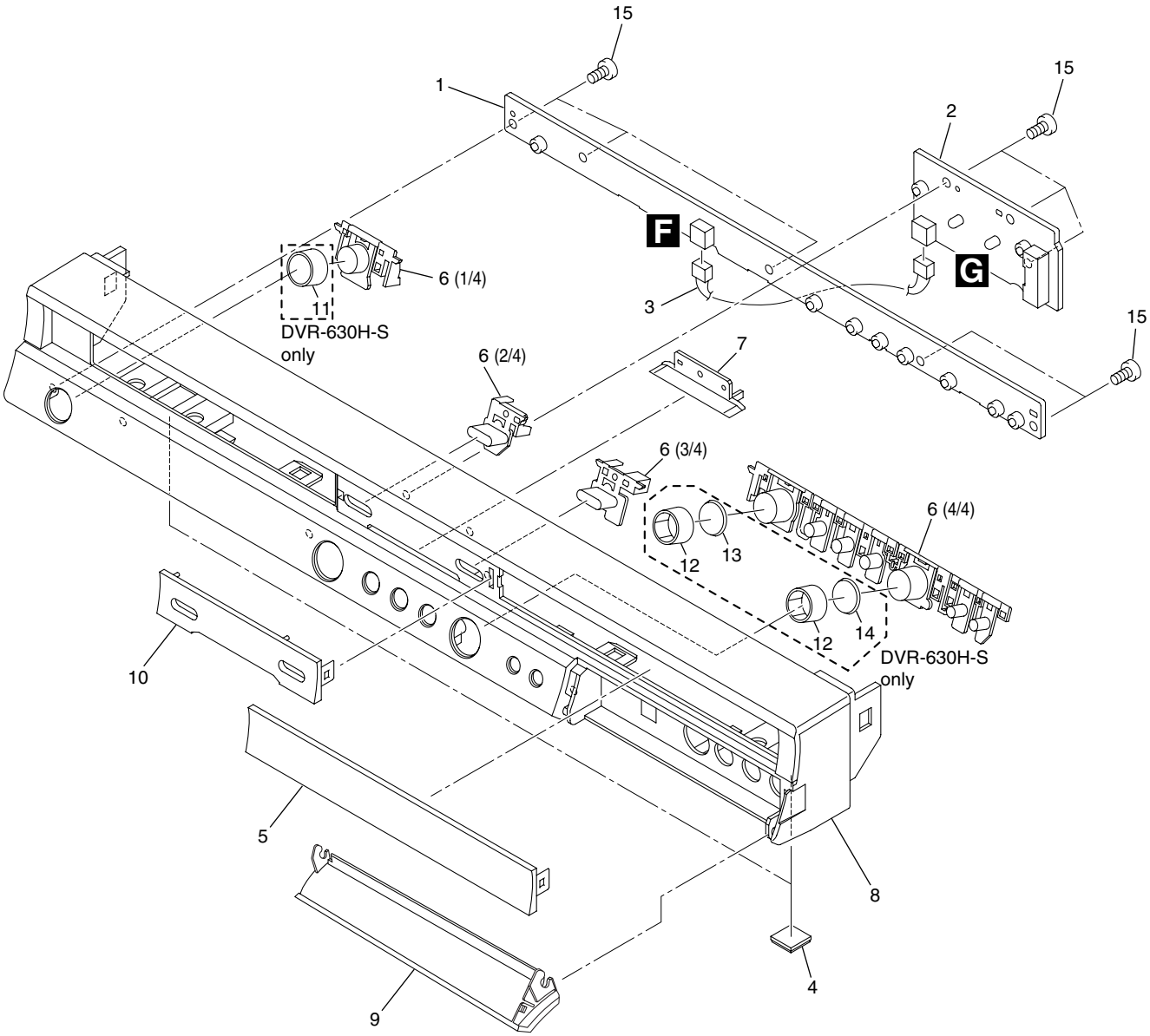
Mark	No.	Description	Part No.
	1	TUNB Assy (for service)	VXX3025
	2	JACB Assy	VWV2115
	3	FLJB Assy	VWG2536
	4	DVJB Assy	VWG2523
	5	ATAB Assy	VWV2123
	6	MAIN Assy (for service)	VXX2997
	7	SCRB Assy (for service)	VXX3021
⚠	8	POWER SUPPLY Unit	VWR1392
	9	HDD	See Contrast table (2)
	10	DRIVE Assy R9R	VXX2987
	11	Flexible Cable (27P)	VDA2063
	12	Flexible Cable (16P)	VDA2064
	13	Flexible Cable (40P)	VDA2065
	14	Flexible Cable (40P)	VDA2066
	15	Flexible Cable (27P)	VDA2067
	16	Housing Assy (4P)	VKP2357
	17	Housing Assy (4P)	VKP2358
	18	Ferrite Core	VTH1050
	19	DC Fan Motor	VXM1120
	20	Rubber Foot	VEB1349
	21	Rubber Spacer (CR)	VEB1373
NSP	22	PC Support	VEC1749
	23	Gasket 10 x 7T	VEC2472
	24	Gasket 40 x 5T	VEC2473
	25	Gasket 10 x 25T	VEC2475
	26	Aluminum Tape 50 x 25	VEF1058
	27	Aluminum Tape 135 x 25	VEF1059
	28	Bonnet Case S	VXX3039
	29	Rear Panel	See Contrast table (2)
NSP	30	Base Chassis	VNB1052
NSP	31	HDD Stay	VNE2369
	32	DV Angle	VNE2370
NSP	33	Writer Stay L	VNE2371
NSP	34	Writer Stay R	VNE2372
NSP	35	PCB Base	VNE2378
	36	Fan Duct	VNK5693
NSP	37	Binder (BK-1)	ZCA-BK1
	38	Pioneer Name Plate	VAM1148
	39	Tray Sheet	VEC2467
	40	Tray Panel EB	VNK5715
	41	Bonnet Label	See Contrast table (2)
NSP	42	P. Plate Holder	PNY-405
	43	Earth Plate TU	VBK1156
	44	#6-32 Screw	DBA1125
	45	Screw	VBA1098
	46	Screw	VBA1104
	47	Screw	AMZ30P060FTC
	48	Screw	BBZ30P040FTC
	49	Screw	BBZ30P060FTC
	50	Screw	BPZ30P080FTC
	51	Screw	BPZ30P250FTC
	52	Screw	BSR30P060FTC
	53	Screw	BSZ30P060FTC
	54	Screw	PBZ30P080FTC
NSP	55	Tape	ZTA-156A-19
NSP	56	Serial Label S	VRW2188
NSP	57	ID Label Assy	VXW1006
	58	HDD Caution 8L B	VRR1062

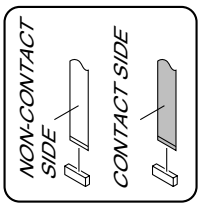
(2) CONTRAST TABLE

DVR-530H-S/WYXV, WVXV, DVR-530H-AV/WYXV, WVXV, DVR-630H-S/WYXV and WVXV are constructed the same except for the following:

Mark	No.	Symbol and Description	DVR-530H-S /WYXV	DVR-530H-S /WVXV	DVR-530H-AV /WYXV	DVR-530H-AV /WVXV	DVR-630H-S /WYXV	DVR-630H-S /WVXV
	9	HDD 160G WD1600BBGUCS	VXF1068	VXF1068	VXF1068	VXF1068	Not used	Not used
	9	HDD 250G ST3250823 S	Not used	Not used	Not used	Not used	VXF1082	VXF1082
	29	Rear Panel	VNA2772	VNA2772	VNA2773	VNA2773	VNA2793	VNA2793
	41	Bonnet Label	VRW2172	VRW2172	VRW2181	VRW2181	VRW2192	VRW2192

2.3 FRONT PANEL SECTION





(1) FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	PSWB Assy	VWG2526
	2	RSWB Assy	VWG2530
	3	Housing Assy (3P)	VKP2359
	4	Rubber Foot	VEB1349
	5	FL Lens E	VNK5706
	6	Main Key	See Contrast table (2)
	7	Center Lens E	VNK5713
	8	Front Panel E	See Contrast table (2)
	9	Door E	See Contrast table (2)
	10	Center Panel EB2	VNK5714
	11	Key Top A	See Contrast table (2)
	12	Ring E	See Contrast table (2)
	13	PLAY Plate E	See Contrast table (2)
	14	REC Plate E	See Contrast table (2)
	15	Screw	BPZ30P080FTC

(2) CONTRAST TABLE

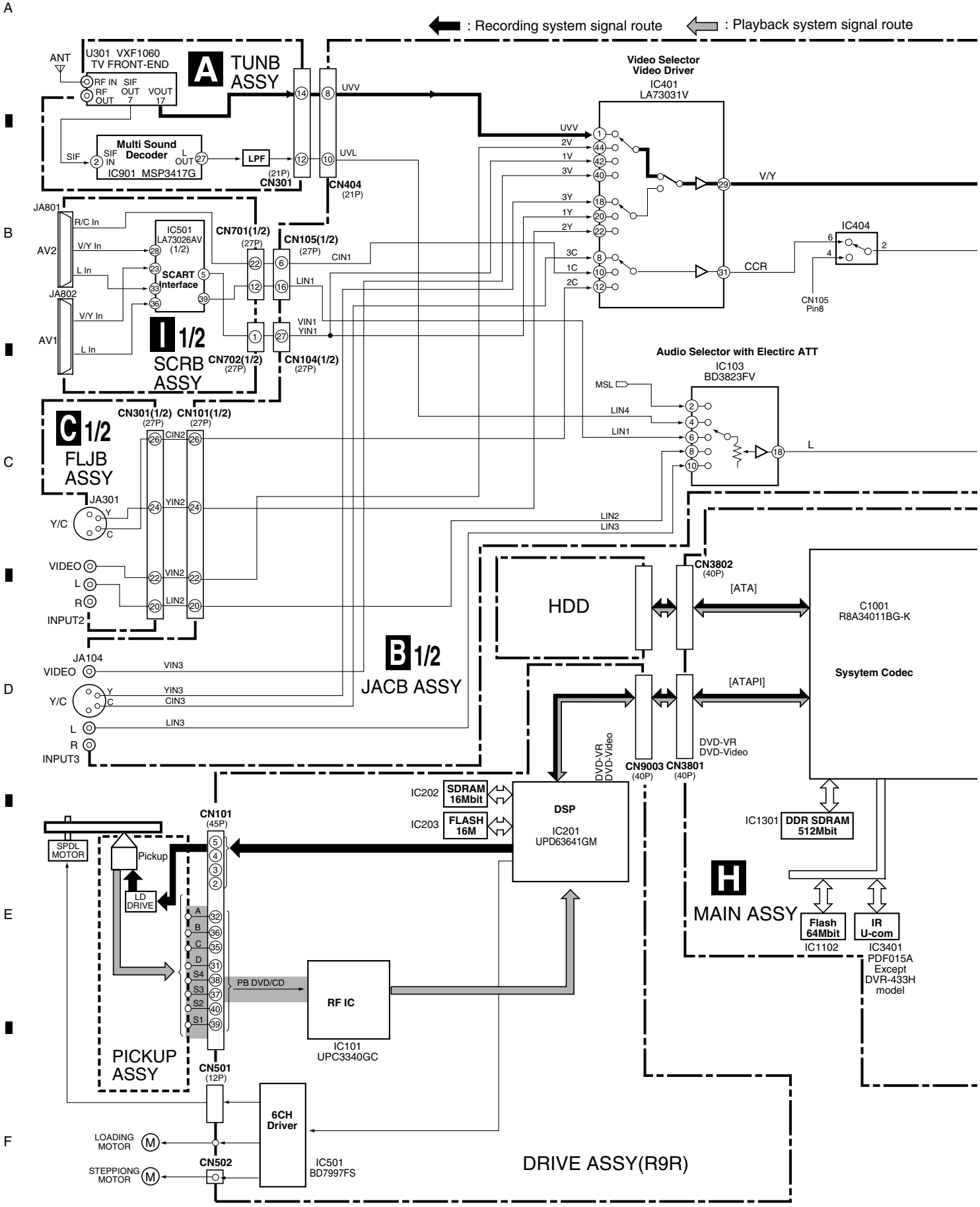
DVR-530H-S/WYXV, WVXV, DVR-530H-AV/WYXV, WVXV, DVR-630H-S/WYXV and WVXV are constructed the same except for the following:

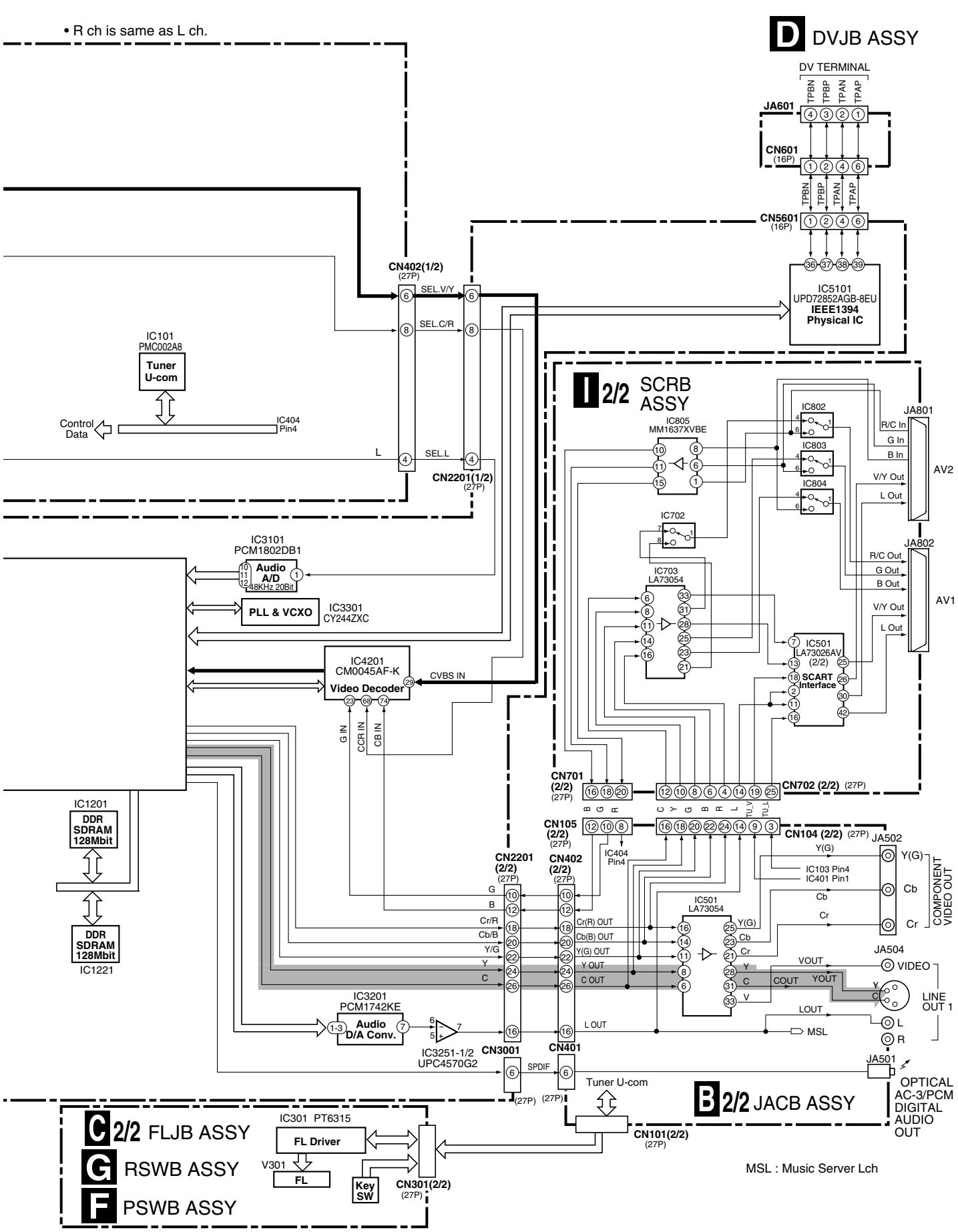
Mark	No.	Symbol and Description	DVR-530H-S /WYXV	DVR-530H-S /WVXV	DVR-530H-AV /WYXV	DVR-530H-AV /WVXV	DVR-630H-S /WYXV	DVR-630H-S /WVXV
	6	Main Key E1	VNK5707	VNK5707	VNK5707	VNK5707	Not used	Not used
	6	Main Key E2	Not used	Not used	Not used	Not used	VNK5704	VNK5704
	8	Front Panel E	VNK5763	VNK5763	VNK5763	VNK5763	VNK5816	VNK5816
	9	Door E	VNK5708	VNK5708	VNK5708	VNK5708	VNK5834	VNK5834
	11	Key Top A	Not used	Not used	Not used	Not used	VNK5717	VNK5717
	12	Ring E	Not used	Not used	Not used	Not used	VNK5719	VNK5719
	13	PLAY Plate E	Not used	Not used	Not used	Not used	VNK5720	VNK5720
	14	REC Plate E	Not used	Not used	Not used	Not used	VNK5721	VNK5721

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

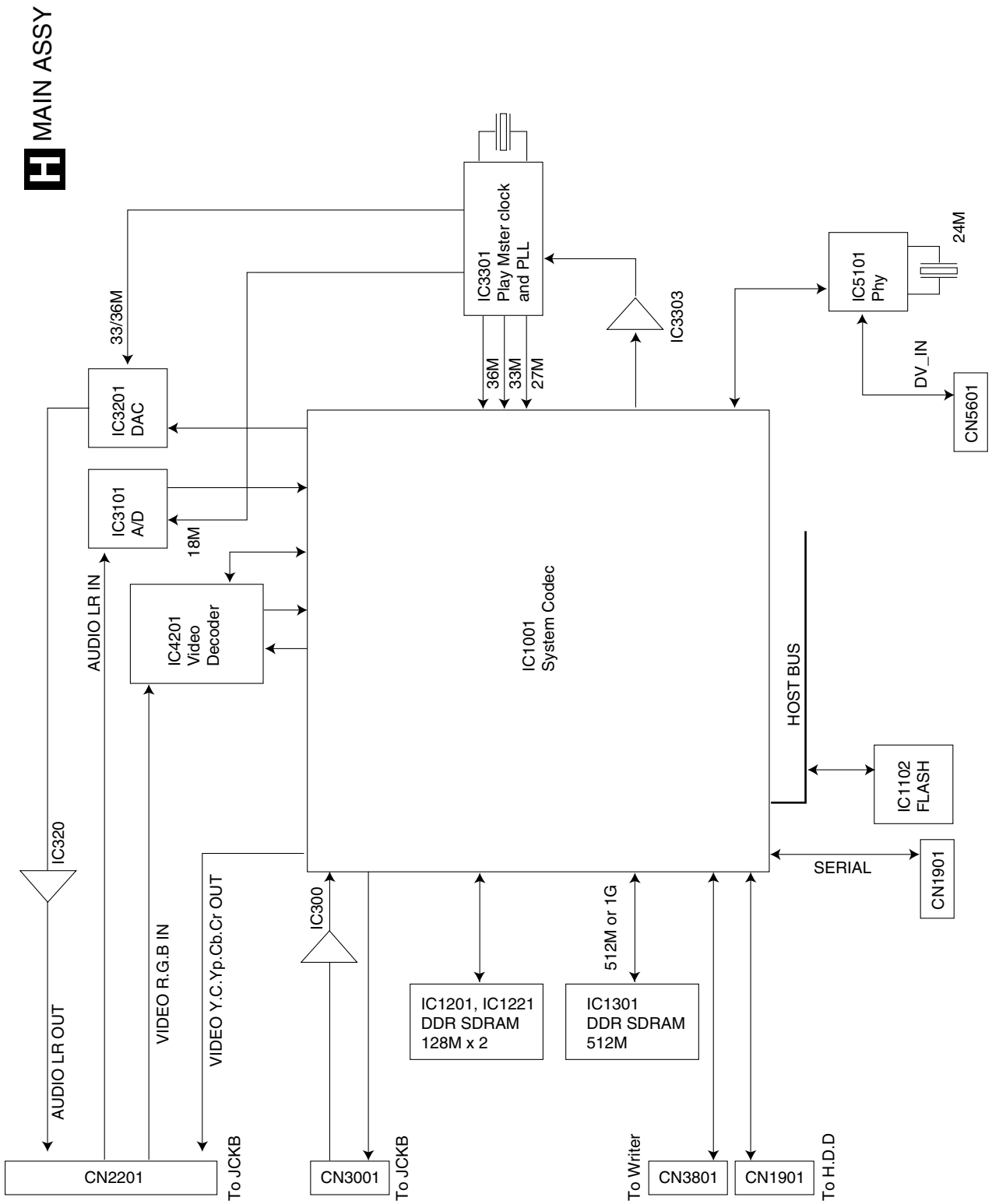
3.1 BLOCK DIAGRAM

3.1.1 OVERALL BLOCK DIAGRAM




• R ch is same as L ch.
D DVJB ASSY
DV TERMINAL
TPBN
TPBP
TPAN
TPAP
JA601
CN601
(16P)
CN5601
(16P)
IC5101
UPD72852AGB-8EU
IEEE1394
Physical IC
CN402(1/2)
(27P)
SEL.V/Y
SEL.C/R
SEL.L
CN2201(1/2)
(27P)
IC101
PMC002A8
Tuner
U-com
Control
Data
IC404
Pin4
I 2/2 SCRB
ASSY
IC805
MM1637XVBE
IC802
IC803
IC804
IC702
IC703
LA73054
IC501
LA73026AV
(2/2)
SCART
Interface
JA801
R/C In
G In
B In
V/Y Out
L Out
AV2
JA802
R/C Out
G Out
B Out
V/Y Out
L Out
AV1
IC3101
PCM1802DB1
Audio
A/D
48KHz 20Bit
PLL & VCXO
IC3301
CY244ZXC
IC4201
CM0045AF-K
Video Decoder
CVBS IN
G IN
CCR IN
CB IN
CN701
(2/2)
(27P)
CN702 (2/2) (27P)
CN105
(2/2)
(27P)
CN104 (2/2) (27P)
IC1201
DDR
SDRAM
128Mbit
DDR
SDRAM
128Mbit
IC1221
CN2201
(2/2)
(27P)
CN402
(2/2)
(27P)
G
B
Cr/R
Cb/B
Y/G
Y
C
Cr(R) OUT
Cb(B) OUT
Y(G) OUT
Y OUT
C OUT
IC501
LA73054
Y(G)
Cb
Cr
Y
C
V
JA502
Y(G)
Cb
Cr
COMPONENT
VIDEO OUT
IC103 Pin4
IC401 Pin1
JA504
VIDEO
VOUT
COUT
YOUT
LINE
OUT 1
LOUT
L
R
MSL
IC3201
PCM1742KE
Audio
D/A Conv.
IC3251-1/2
UPC4570G2
CN3001
CN401
SPDIF
L OUT
JA501
OPTICAL
AC-3/PCM
DIGITAL
AUDIO
OUT
Tuner U-com
B 2/2 JACB ASSY
CN101(2/2)
(27P)
C 2/2 FLJB ASSY
G RSWB ASSY
F PSWB ASSY
IC301 PT6315
FL Driver
V301
FL
Key
SW
CN301(2/2)
(27P)
MSL : Music Server Lch

3.1.2 MAIN ASSY



A

B

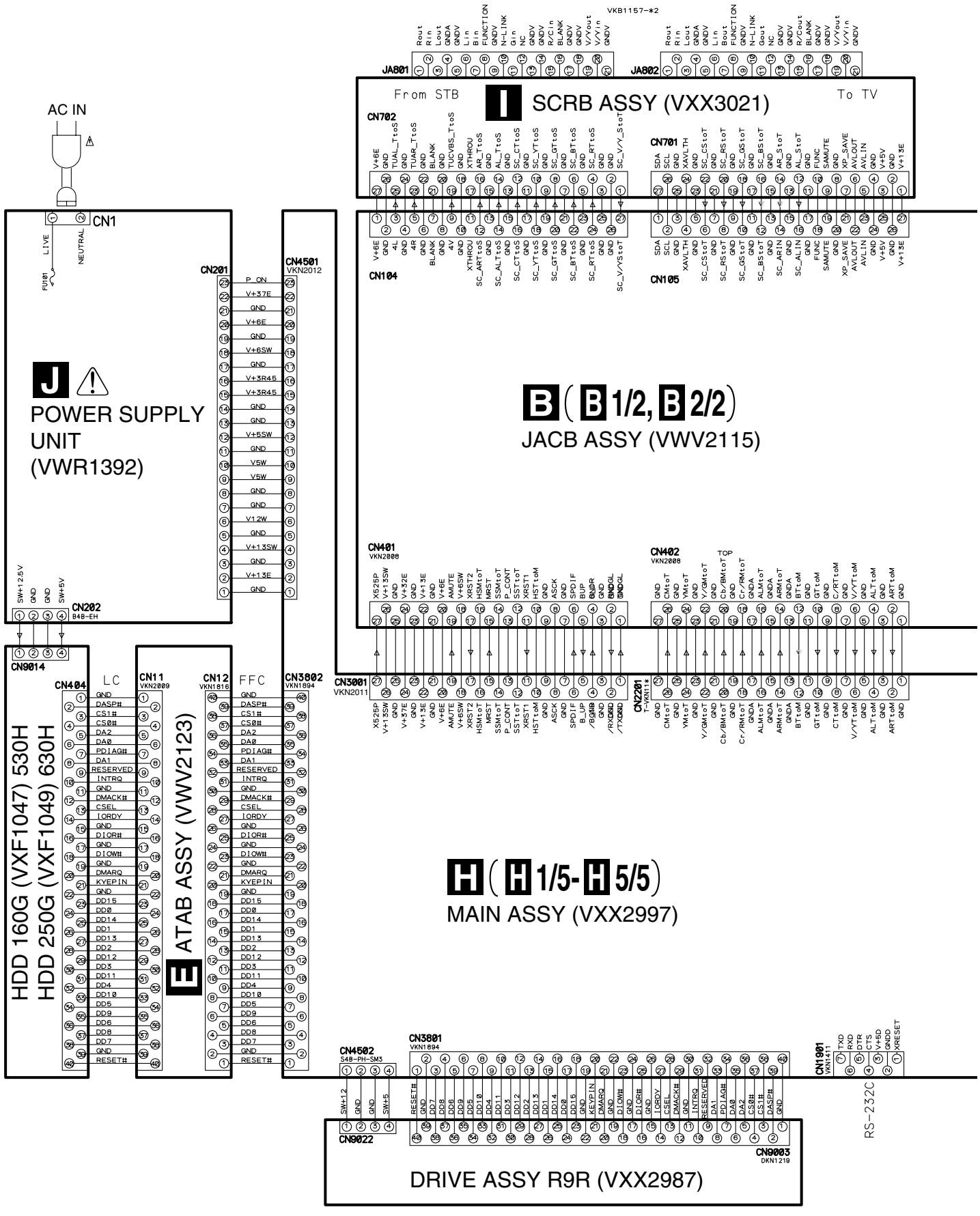
C

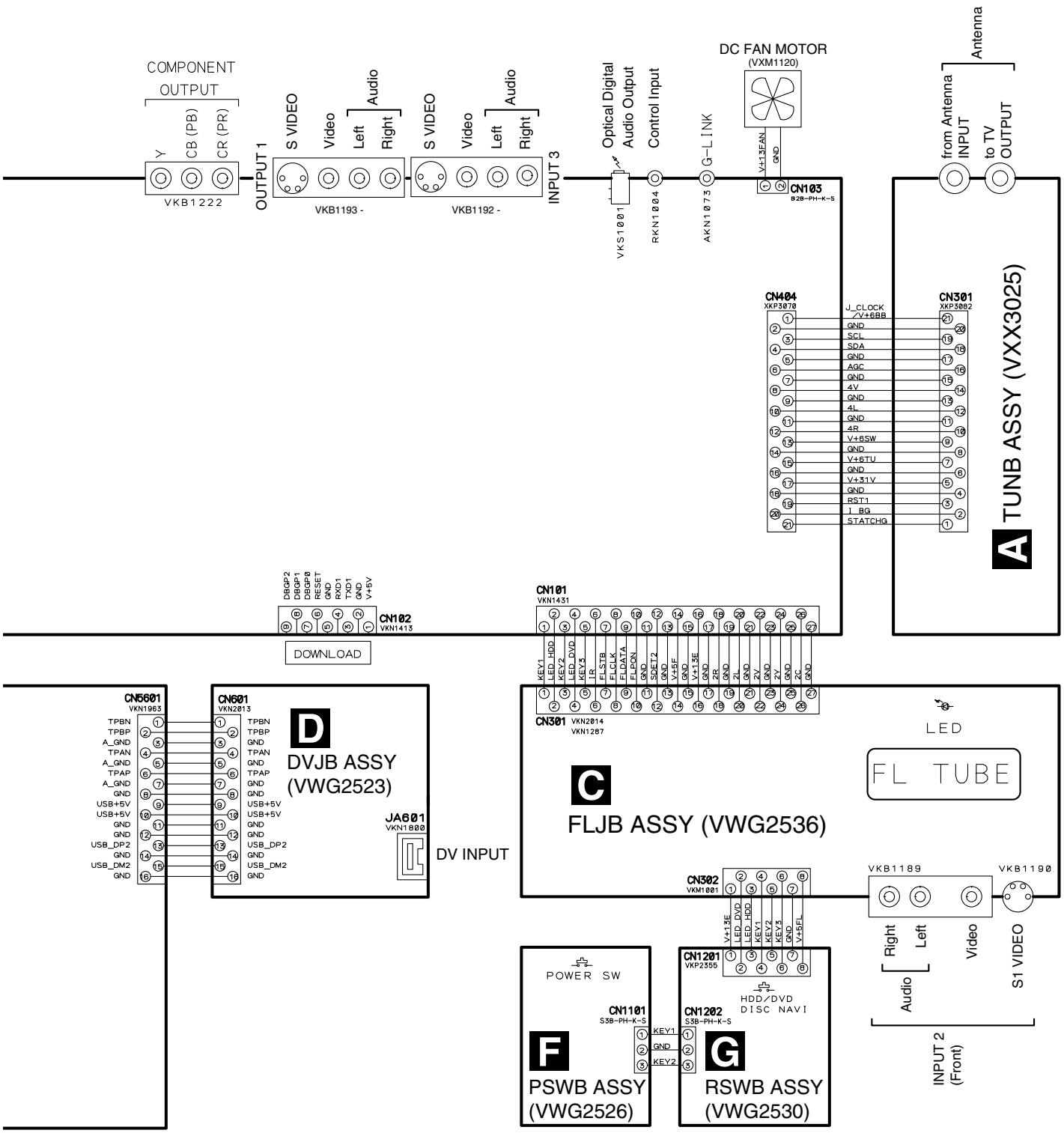
D

E

F

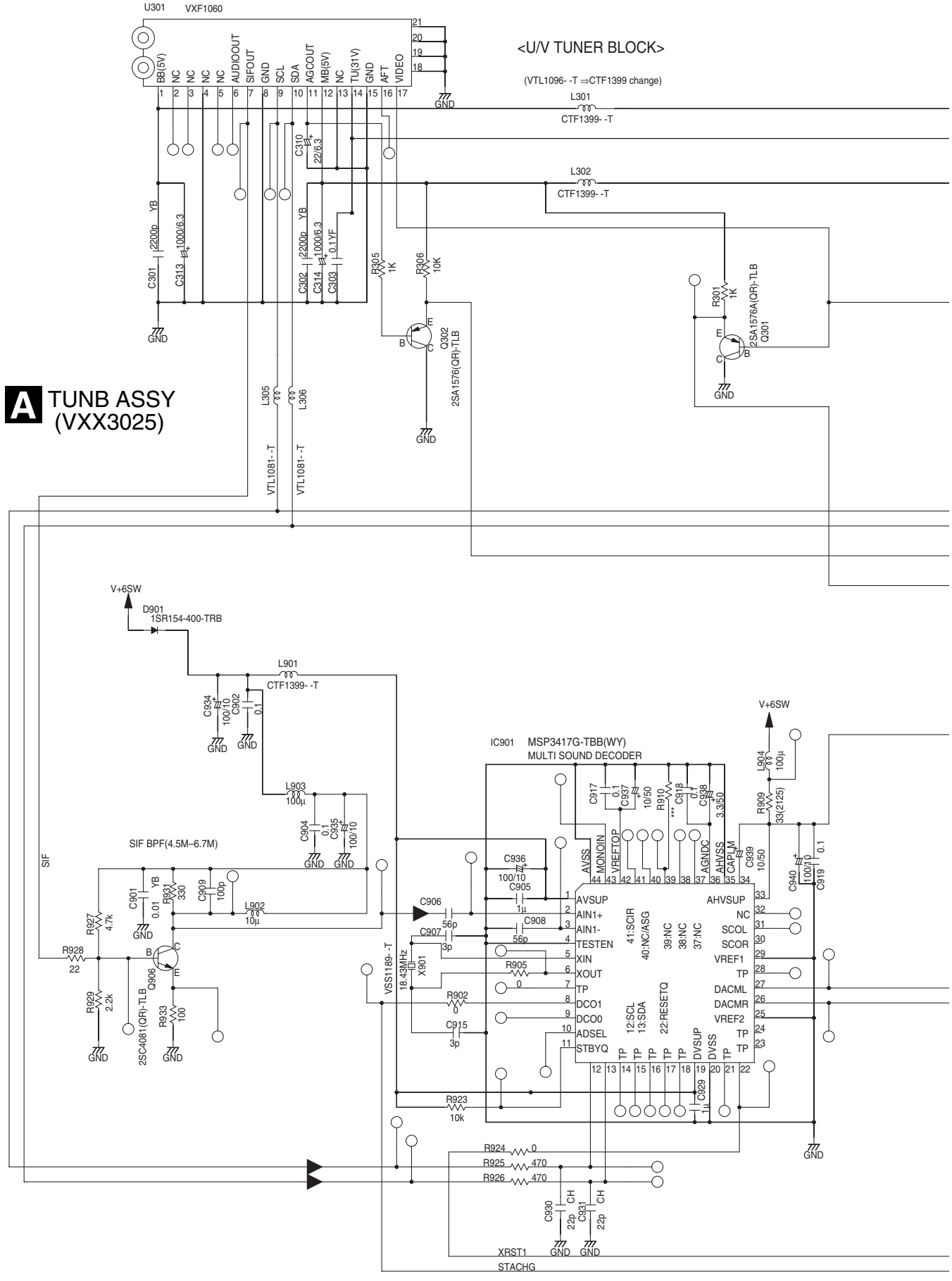
3.2 OVERALL WIRING DIAGRAM

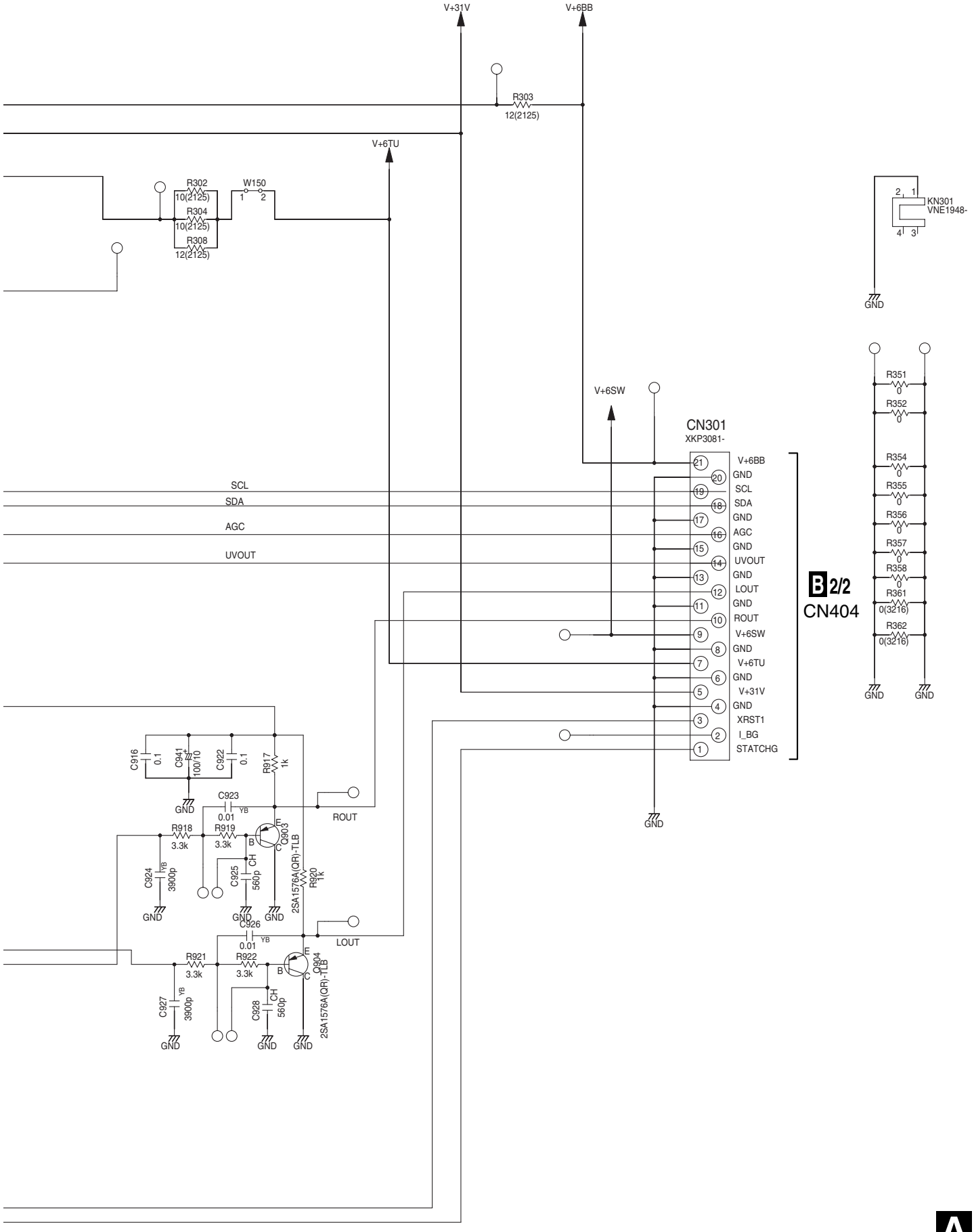




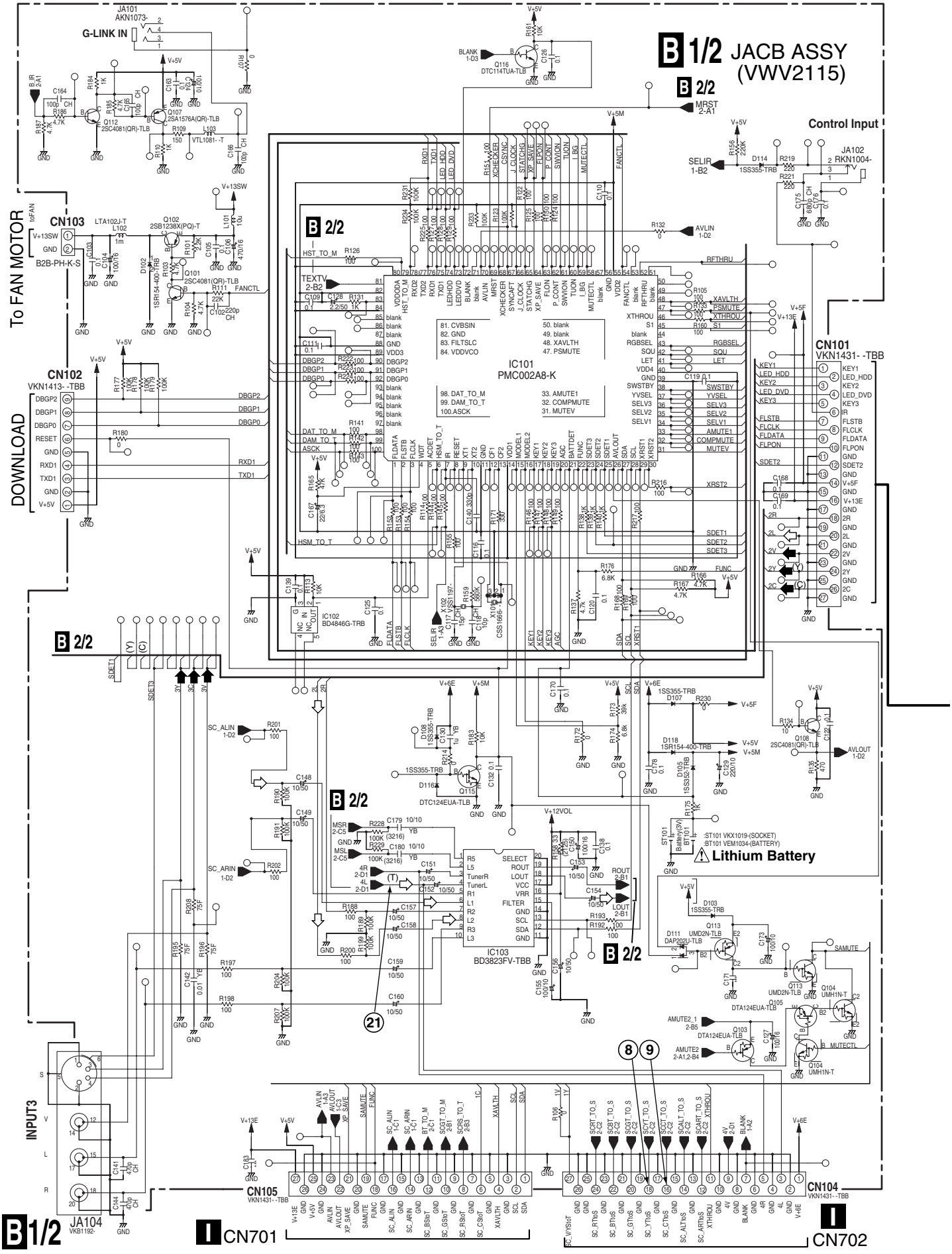
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.

3.3 TUNB ASSY


U301 VXF1060
BB(5V) NC NC NC NC AUDIOOUT SIFOUT GND SCL SDA AGCOUT MB(5V) NC TU(31V) GND AFT VIDEO
<U/V TUNER BLOCK>
(VTL1096- -T ⇒CTF1399 change)
L301 CTF1399- -T
L302 CTF1399- -T
C301 2200p YB
C313 1000/6.3
C310 22/6.3
C302 2200p YB
C314 1000/6.3
C303 0.1YF
R305 1K
R306 10K
Q302 2SA1576(QR)-TLB
R301 1K
Q301 2SA1576A(QR)-TLB
L305 VTL1081- -T
L306 VTL1081- -T
A TUNB ASSY (VXX3025)
V+6SW
D901 1SR154-400-TRB
L901 CTF1399- -T
L903 100µ
L902 10µ
C934 100/10
C902 0.1
C904 0.1
C935 100/10
SIF BPF(4.5M–6.7M)
SIF
C901 0.01 YB
R931 330
C909 100p
R927 4.7k
R928 22
Q906 2SC4081(QR)-TLB
R929 2.2k
R933 100
IC901 MSP3417G-TBB(WY)
MULTI SOUND DECODER
AVSS MONOIN VREFTOP AGNDC AHVSS CAPLM
AVSUP AIN1+ AIN1- TESTEN XIN XOUT TP DCO1 DCO0 ADSEL STBYQ
AHVSUP NC SCOL SCOR VREF1 TP DACML DACMR VREF2 TP TP
41:SCIR 40:NC/ASG 39:NC 38:NC 37:NC
12:SCL 13:SDA 22:RESETQ
DVSUP DVSS
C936 100/10
C905 1µ
C906 56p
C908 56p
C907 3p
C915 3p
X901 18.43MHz
VSS1189- -T
R905 0
R902 0
R923 10k
C917 0.1
C937 10/50
R910 ***
C918 0.1
C938 3.3/50
L904 100µ
R909 33(2125)
C939 10/50
C940 100/10
C919 0.1
C929 1µ
R924 0
R925 470
R926 470
C930 22p CH
C931 22p CH
XRST1
STACHG
GND

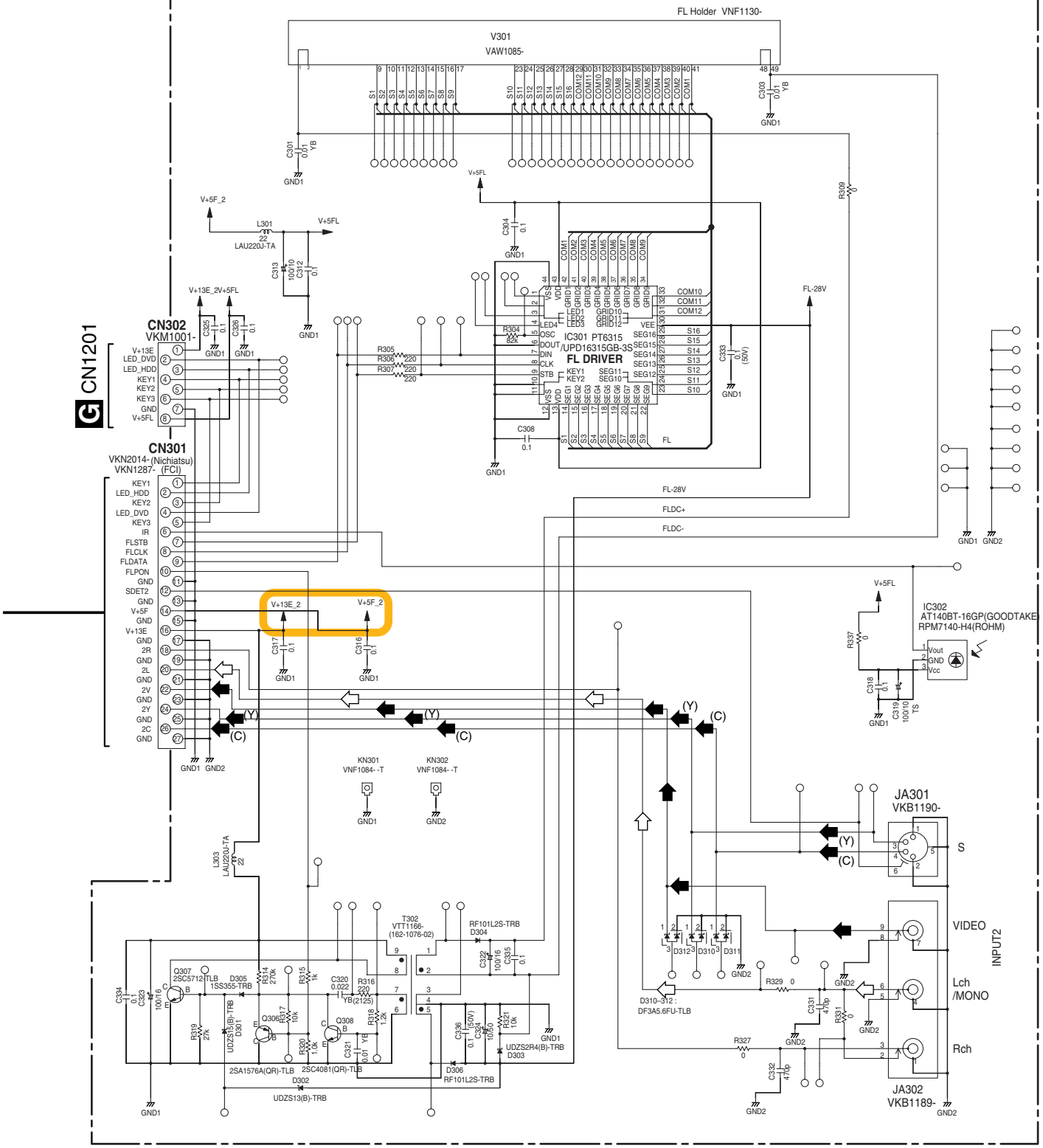

V+31V
V+6BB
R303
12(2125)
V+6TU
R302
10(2125)
W150
R304
10(2125)
R308
12(2125)
KN301
VNE1948-
GND
V+6SW
CN301
XKP3081-
21 V+6BB
20 GND
19 SCL
18 SDA
17 GND
16 AGC
15 GND
14 UVOUT
13 GND
12 LOUT
11 GND
10 ROUT
9 V+6SW
8 GND
7 V+6TU
6 GND
5 V+31V
4 GND
3 XRST1
2 I_BG
1 STATCHG
B 2/2
CN404
R351 0
R352 0
R354 0
R355 0
R356 0
R357 0
R358 0
R361 0(3216)
R362 0(3216)
SCL
SDA
AGC
UVOUT
C916 0.1
C941 100/10
C922 0.1
R917 1k
C923 0.01 YB
ROUT
R918 3.3k
R919 3.3k
Q903
2SA1576A(QR)-TLB
C924 3900p YB
C925 560p CH
R920 1k
C926 0.01 YB
LOUT
R921 3.3k
R922 3.3k
Q904
2SA1576A(QR)-TLB
C927 3900p YB
C928 560p CH
GND

3.4 JACB(1/2) and FLJB ASSYS



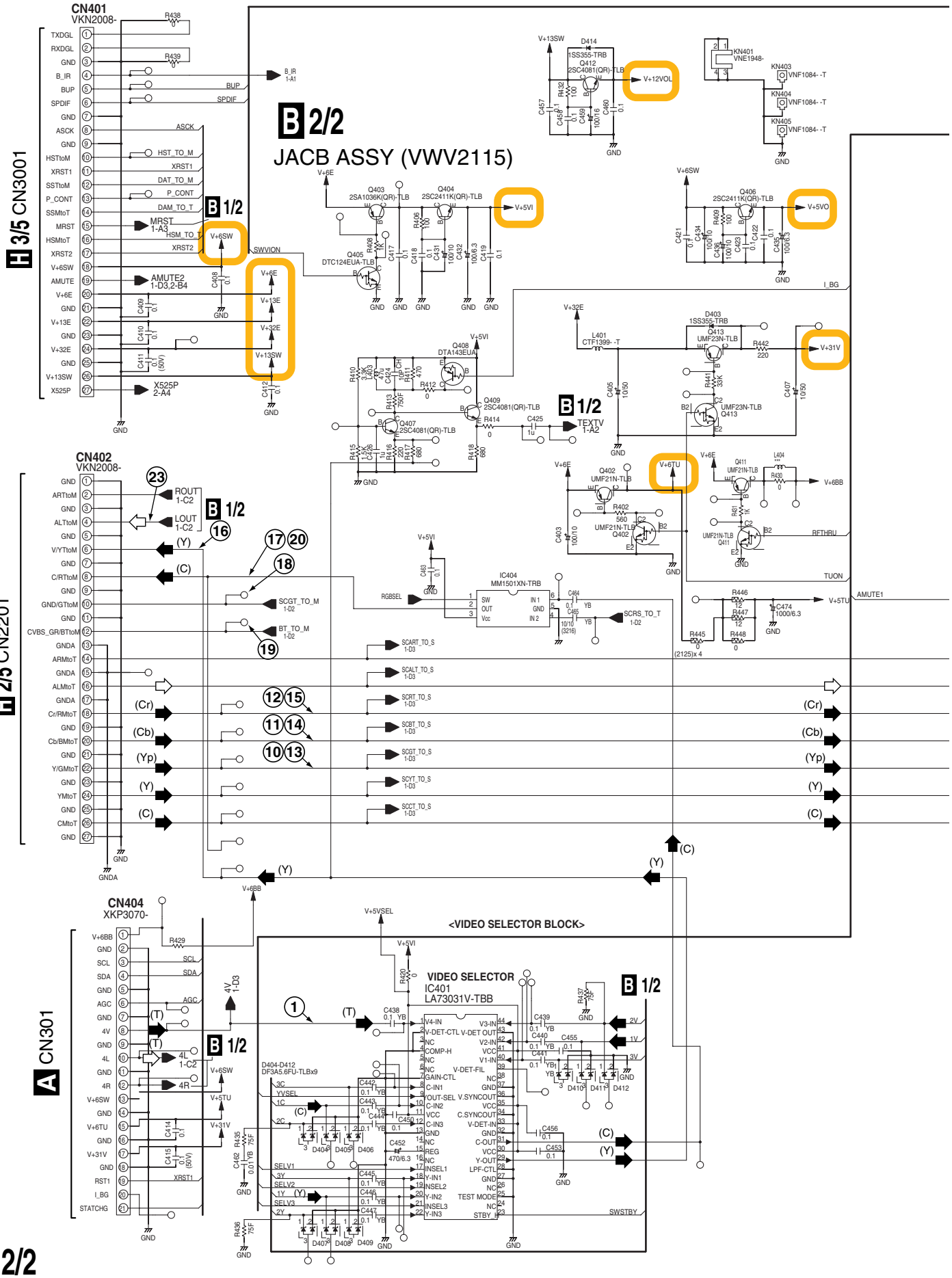
: Video Signal Route
(Y) : Y Video Signal Route
(C) : C Video Signal Route
: AUDIO SIGNAL ROUTE (L ch)
(T) : AUDIO SIGNAL ROUTE (TUNER L ch)

C FLJB ASSY (VWG2536)



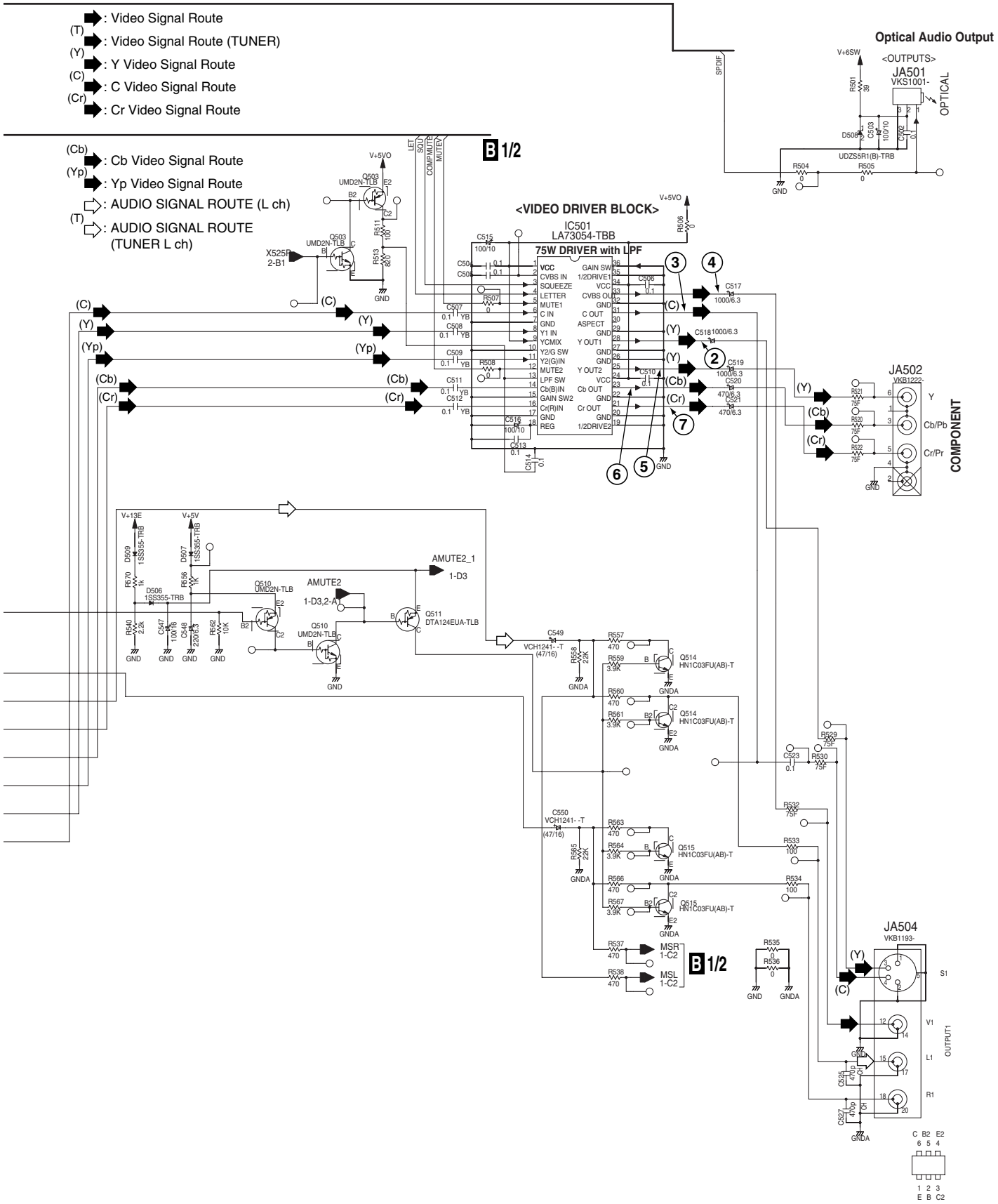
B 1/2 C

3.5 JACB ASSY(2/2)



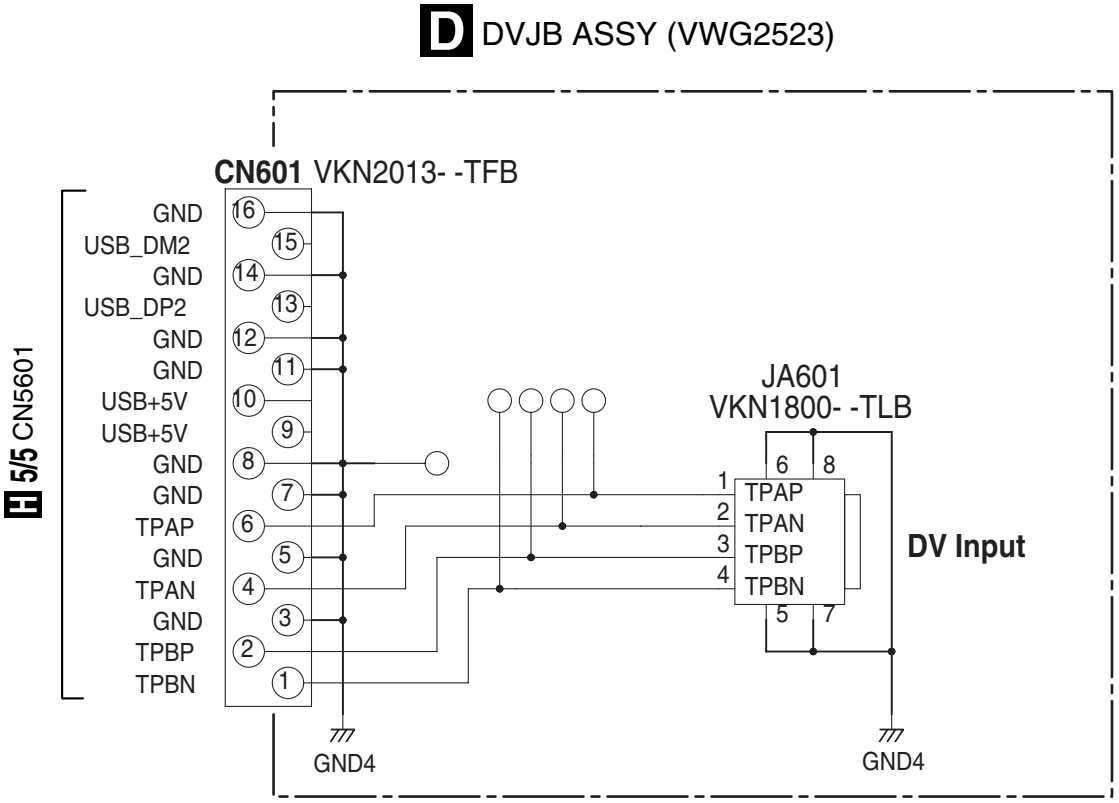
(Video) : Video Signal Route
(T) : Video Signal Route (TUNER)
(Y) : Y Video Signal Route
(C) : C Video Signal Route
(Cr) : Cr Video Signal Route

(Cb) : Cb Video Signal Route
(Yp) : Yp Video Signal Route
: AUDIO SIGNAL ROUTE (L ch)
(T) : AUDIO SIGNAL ROUTE (TUNER L ch)



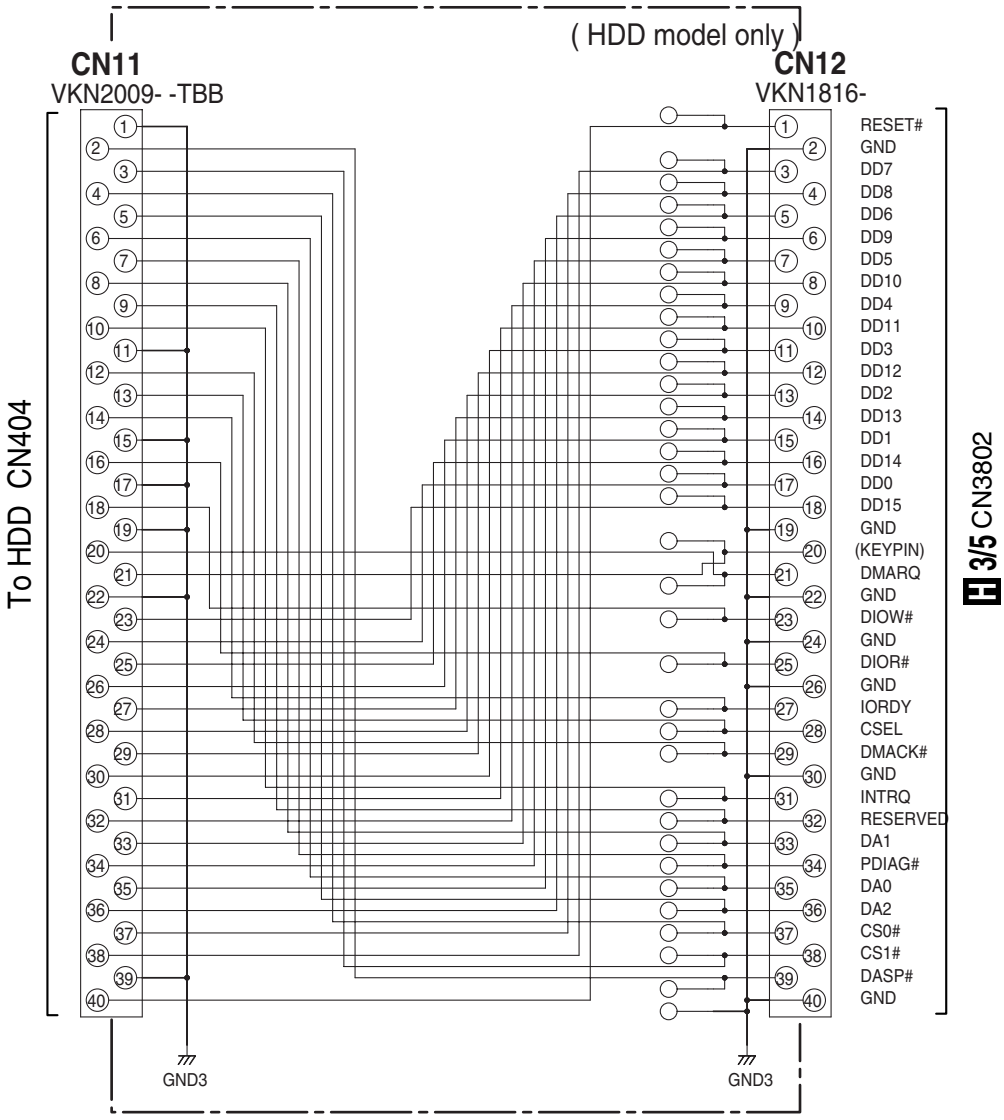
B 2/2

3.6 DVJB ASSY


D DVJB ASSY (VWG2523)
CN601 VKN2013- -TFB
H 5/5 CN5601
GND
USB_DM2
GND
USB_DP2
GND
GND
USB+5V
USB+5V
GND
GND
TPAP
GND
TPAN
GND
TPBP
TPBN
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
JA601
VKN1800- -TLB
1 TPAP
2 TPAN
3 TPBP
4 TPBN
6
8
5
7
DV Input
GND4
GND4

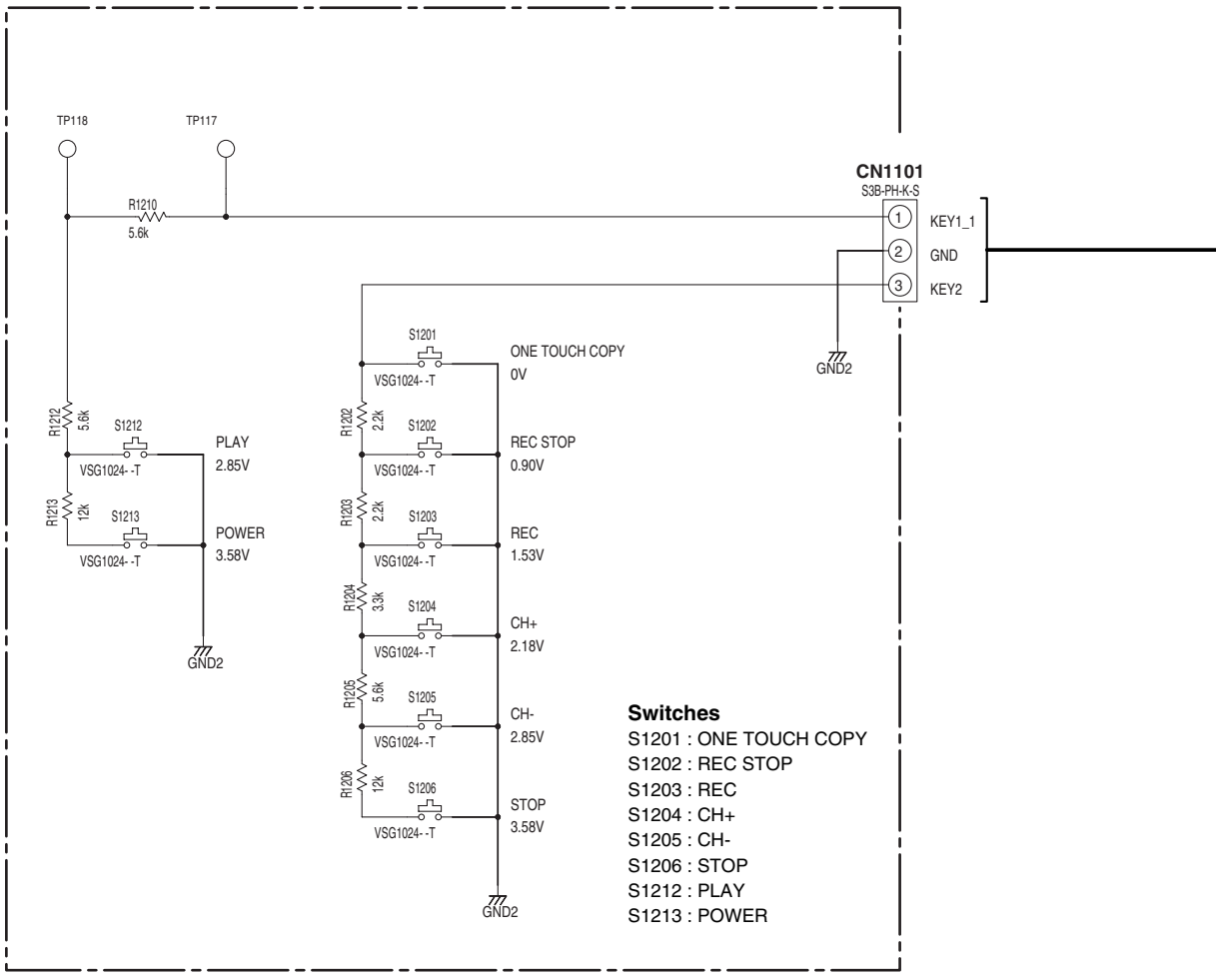
3.7 ATAB ASSY

E ATAB ASSY (VWV2123)(for HDD)

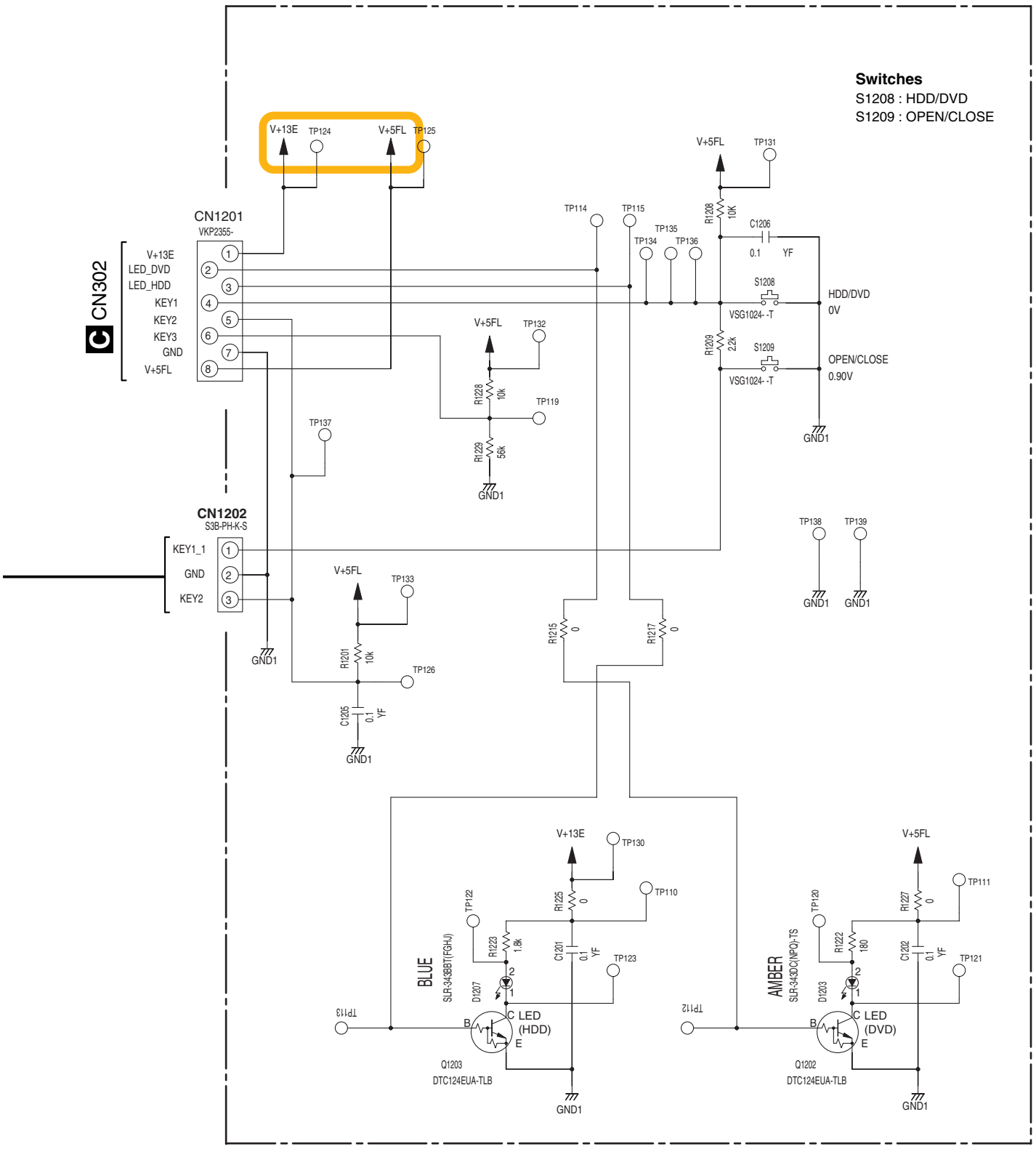


3.8 PSWB and RSWB ASSYS

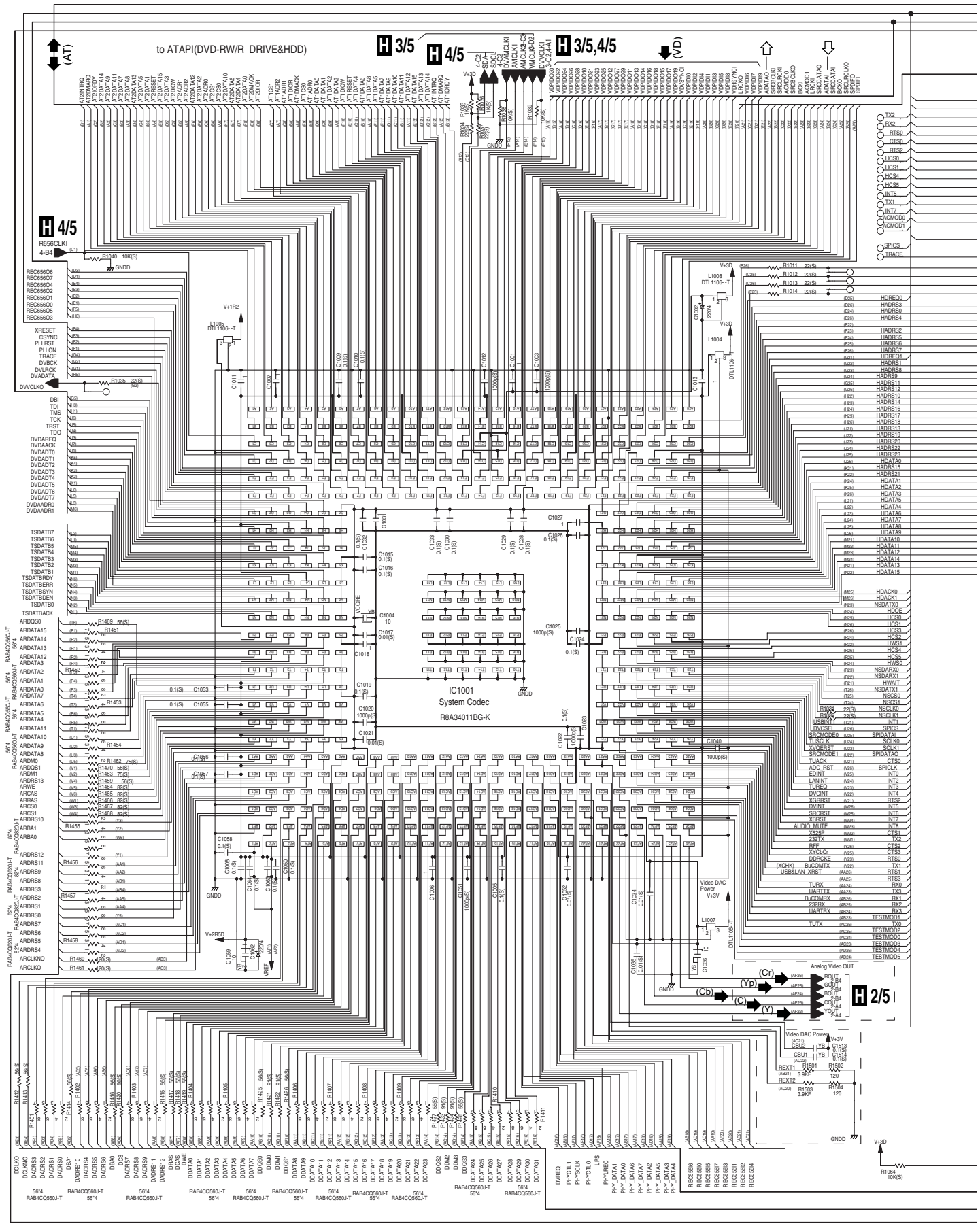
F PSWB ASSY (VWG2526)



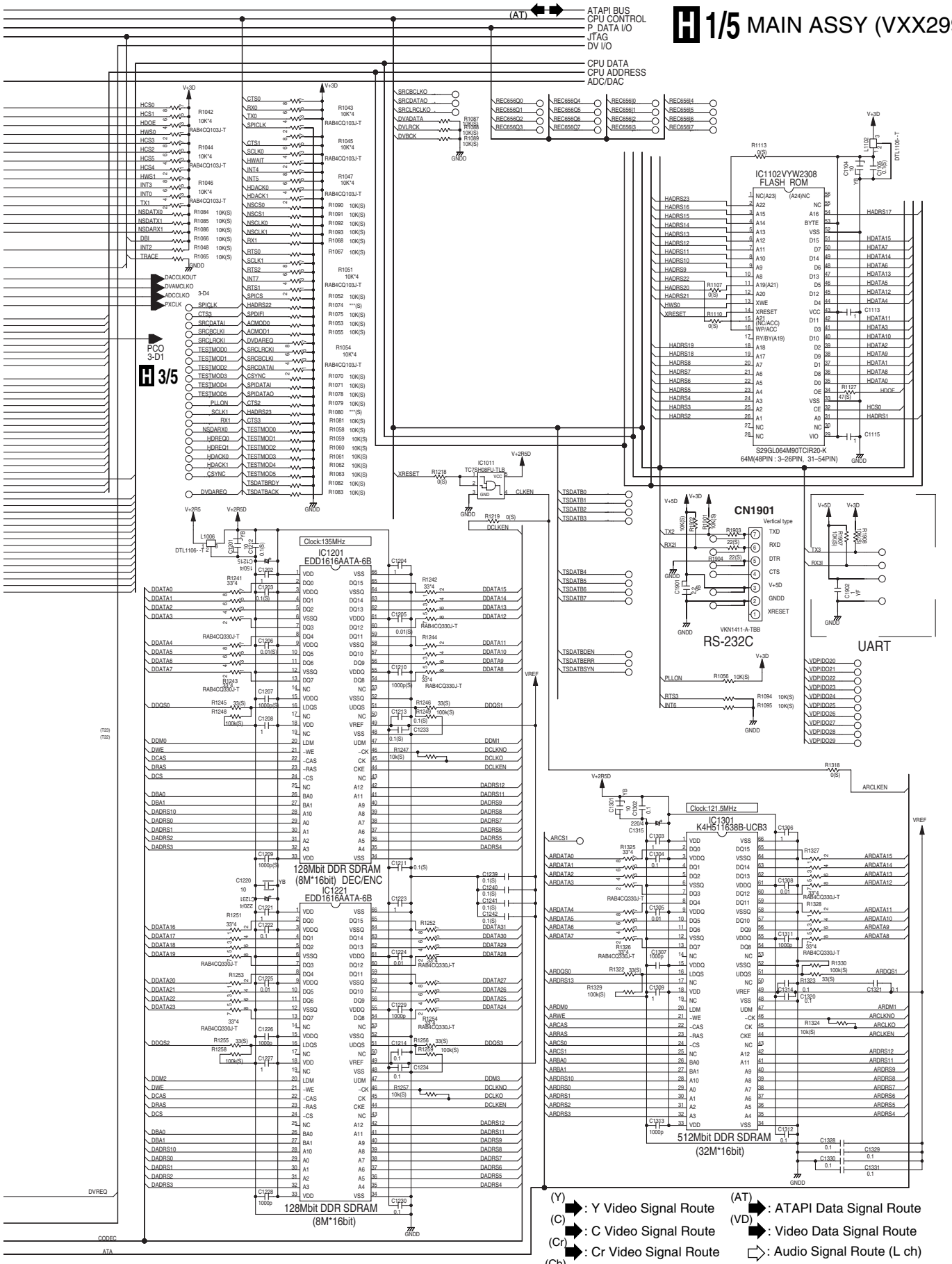
G RSWB ASSY (VWG2530)



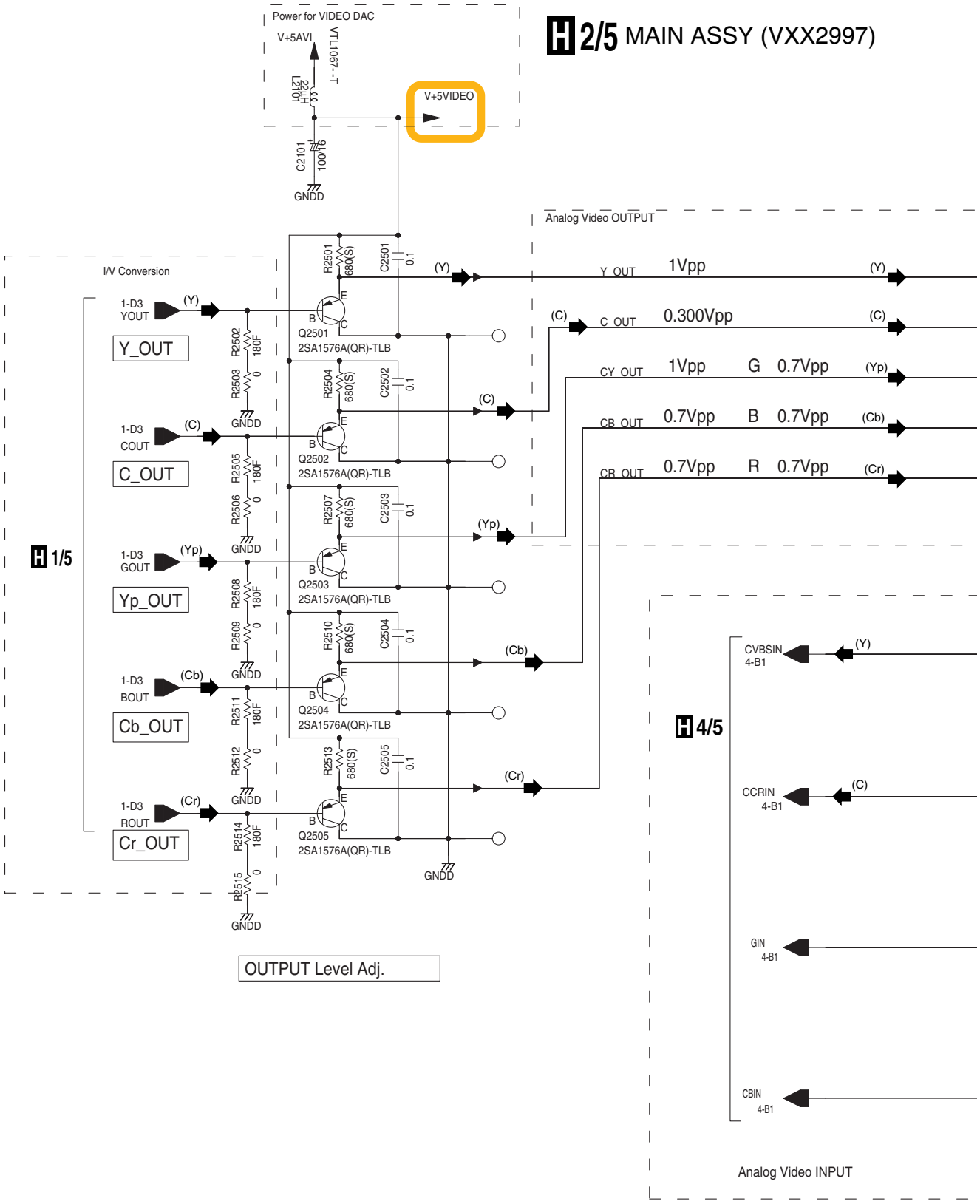
3.9 MAIN ASSY(1/5)



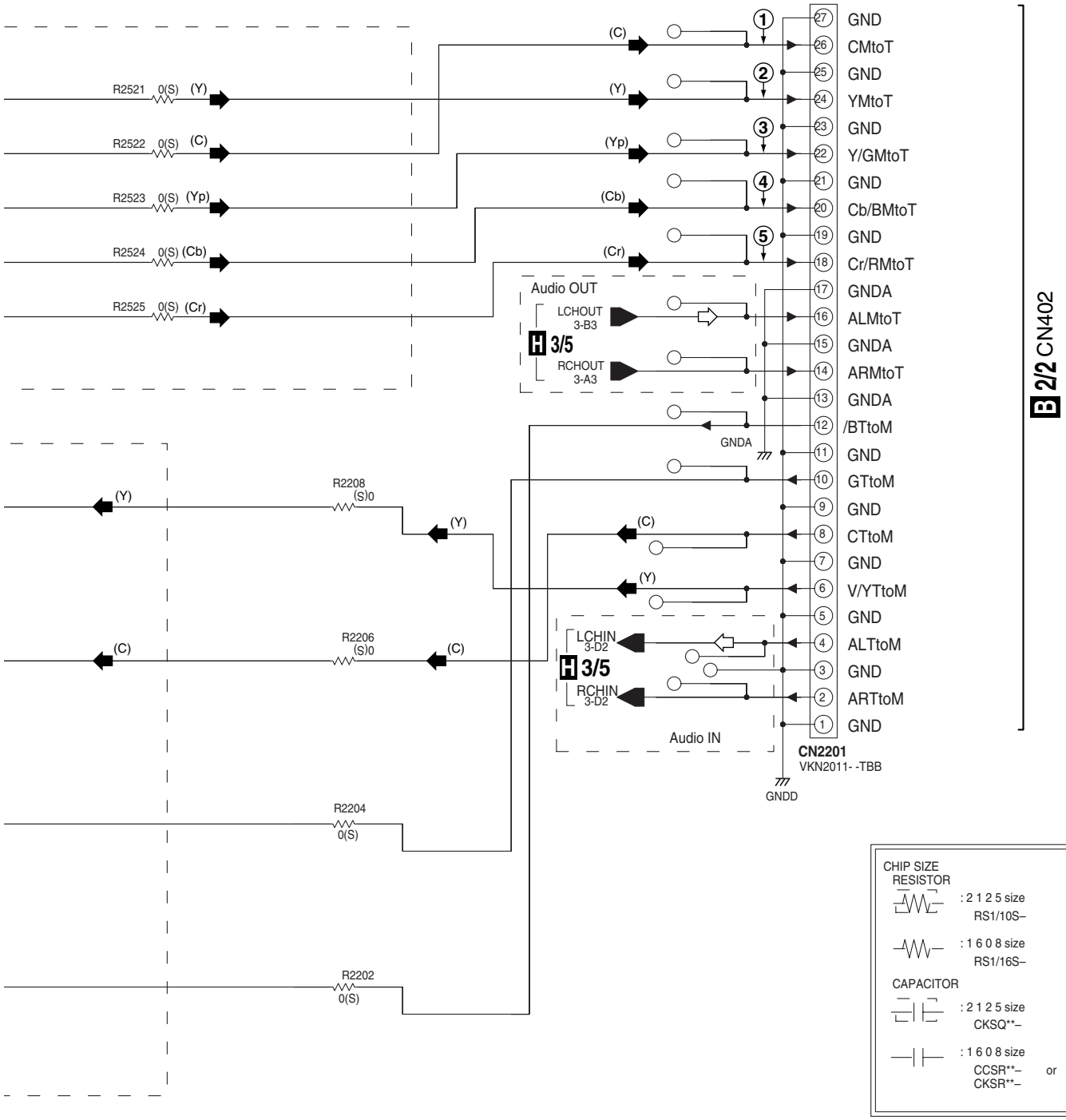
H 1/5 MAIN ASSY (VXX2997)



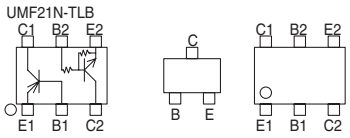
3.10 MAIN ASSY(2/5)



(Y) : Y Video Signal Route
(C) : C Video Signal Route
(Cr) : Cr Video Signal Route
(Cb) : Cb Video Signal Route
(Yp) : Yp Video Signal Route
: Audio Signal Route (L ch)

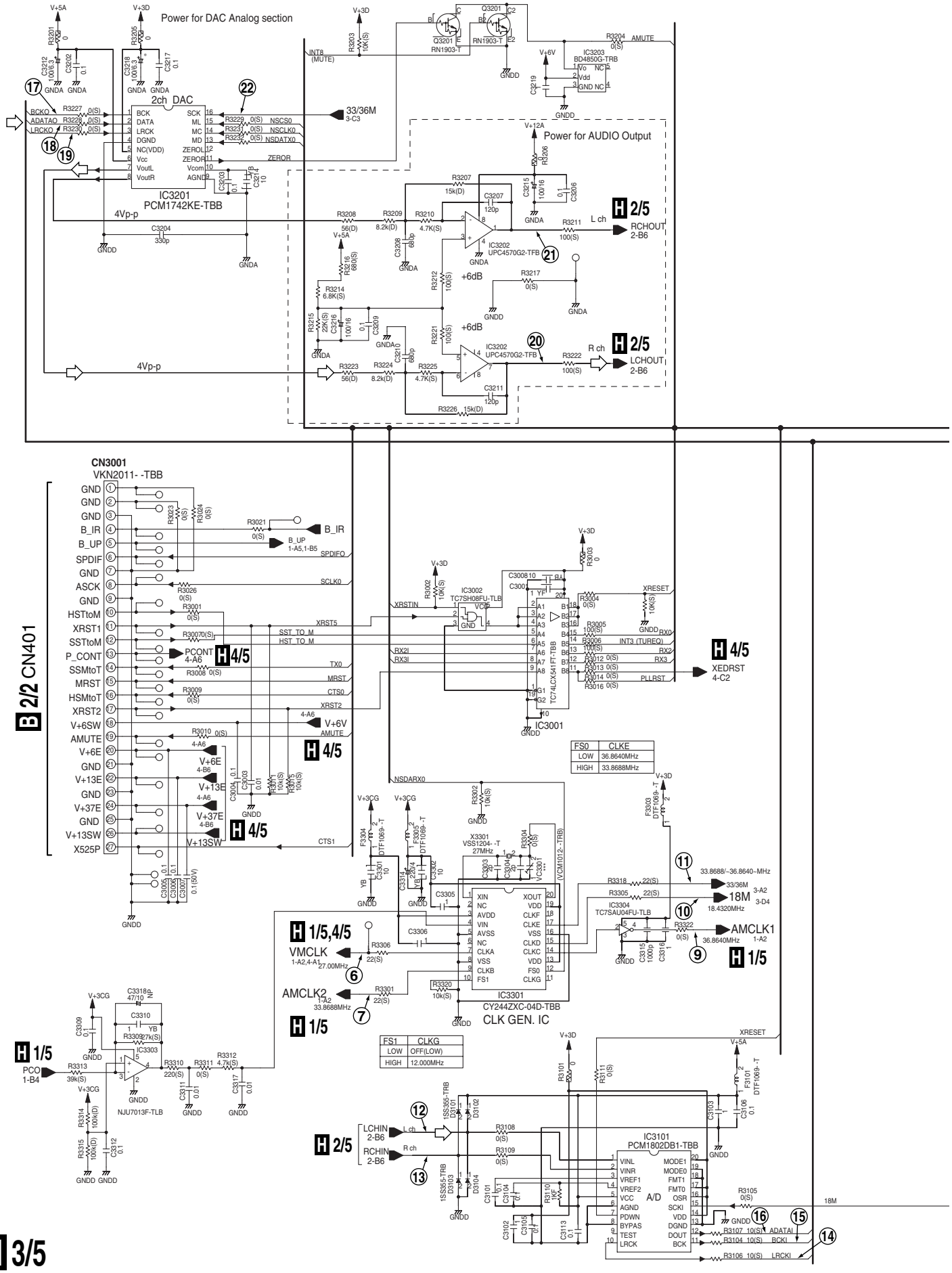


CHIP SIZE
RESISTOR
: 2 1 2 5 size RS1/10S–
: 1 6 0 8 size RS1/16S–
CAPACITOR
: 2 1 2 5 size CKSQ**–
: 1 6 0 8 size CCSR**– or CKSR**–



H 2/5

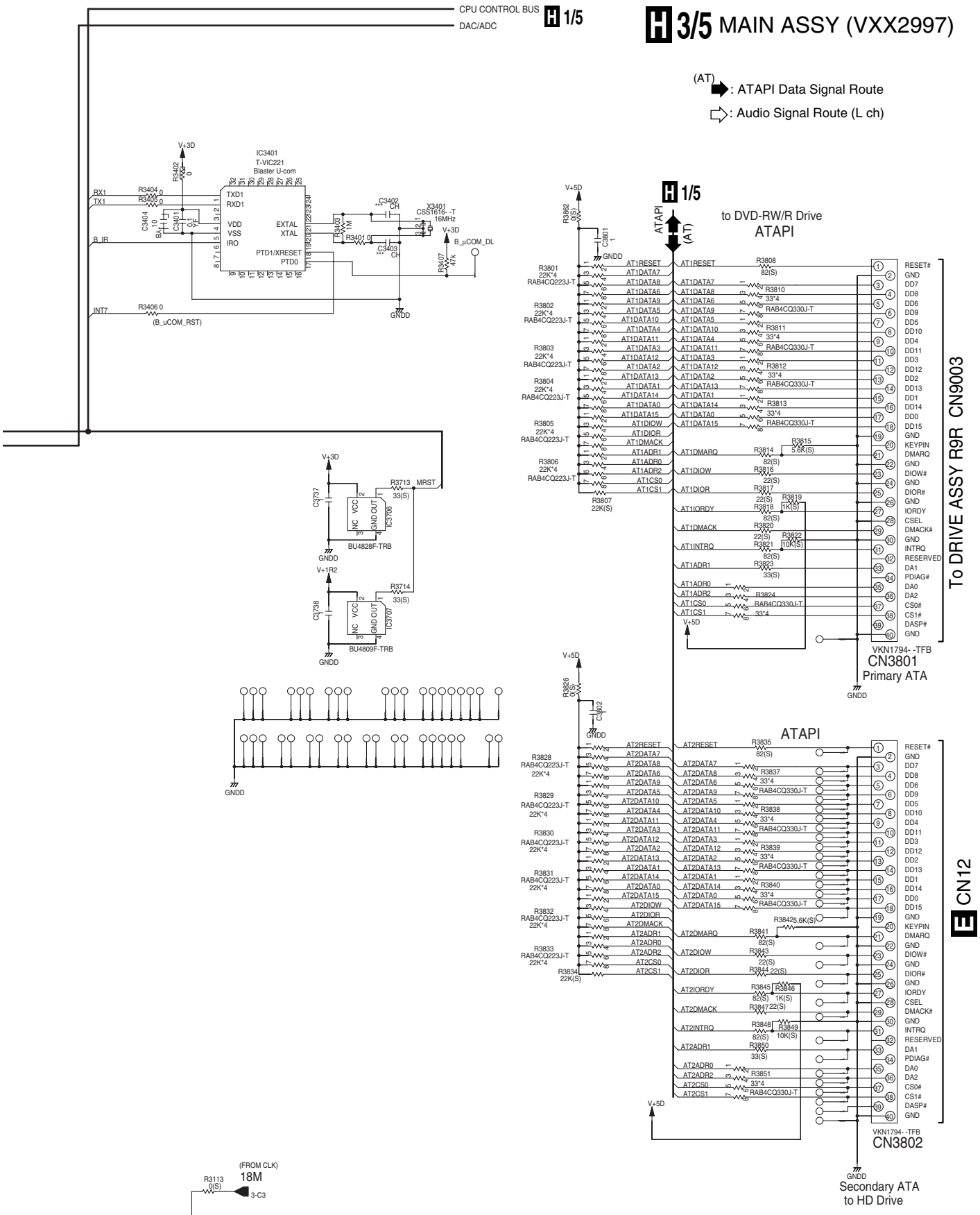
3.11 MAIN ASSY(3/5)



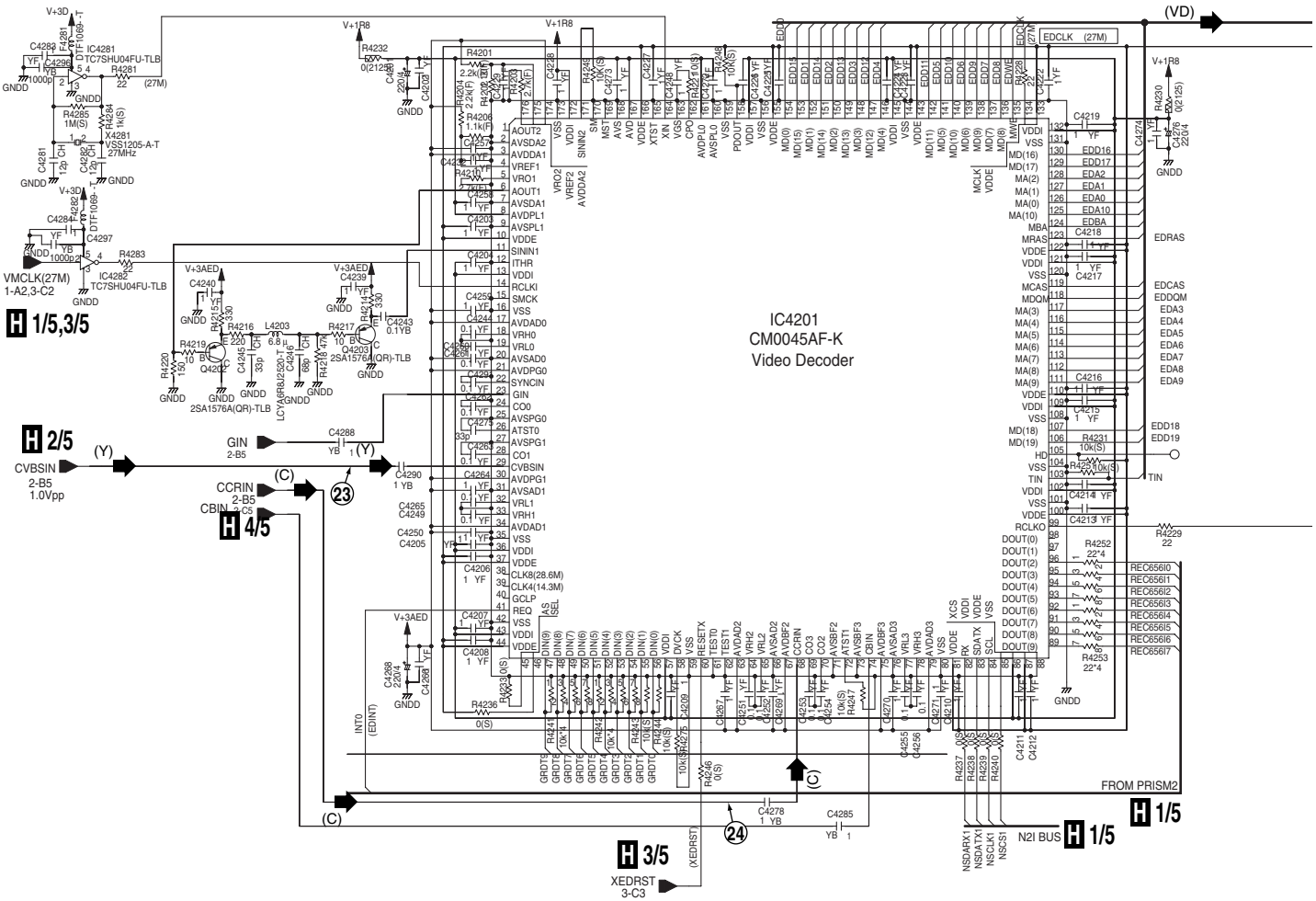
H 3/5 MAIN ASSY (VXX2997)

(AT) ➡: ATAPI Data Signal Route

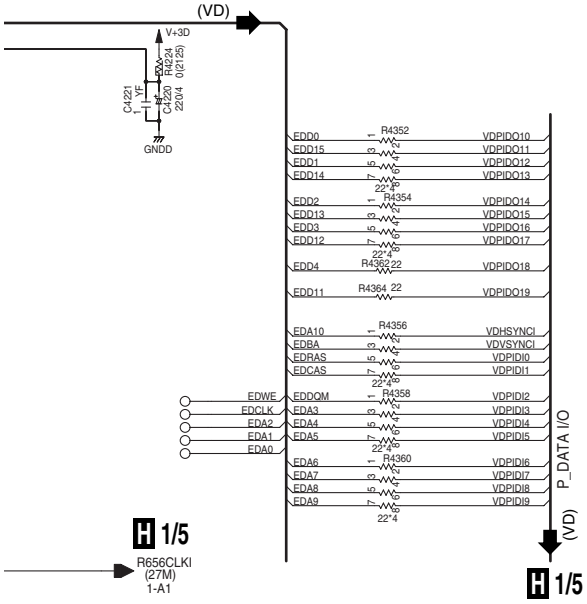
⇨: Audio Signal Route (L ch)

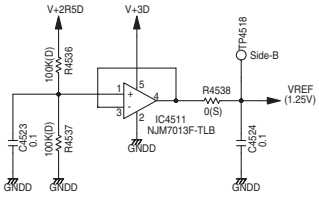


3.12 MAIN ASSY(4/5)

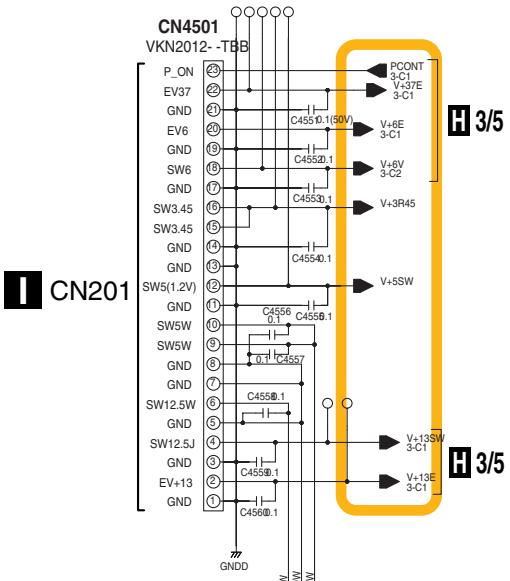


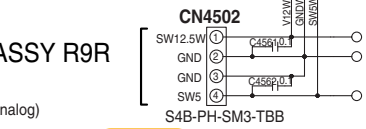
H 4/5 MAIN ASSY (VXX2997)



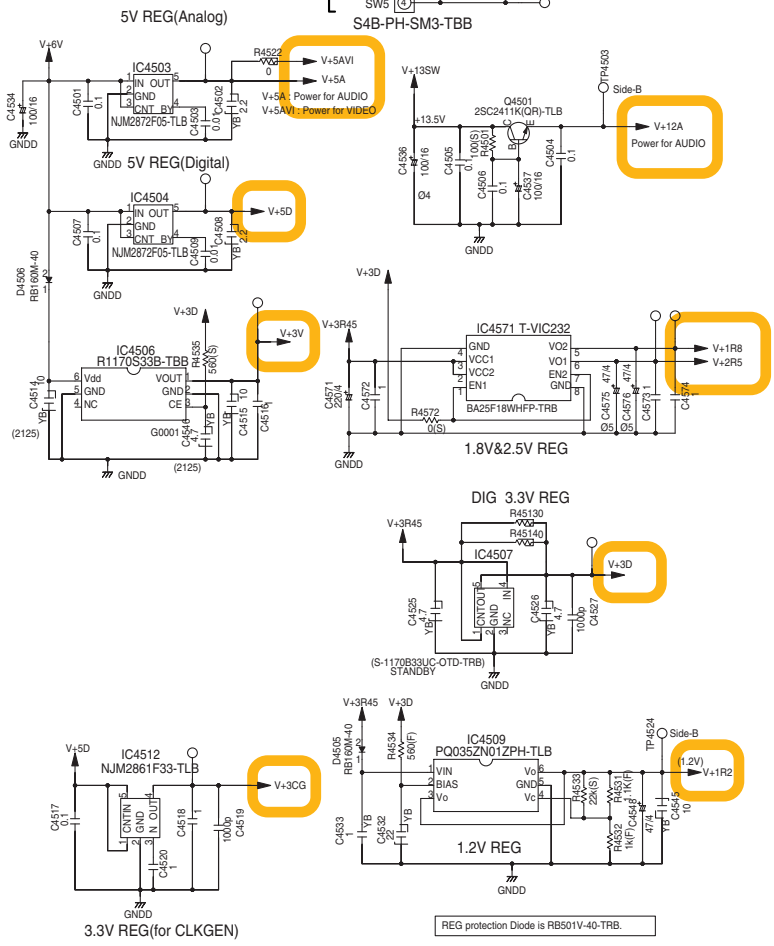


(VD) : Video Data Signal Route
(Y) : Y Video Signal Route
(C) : C Video Signal Route



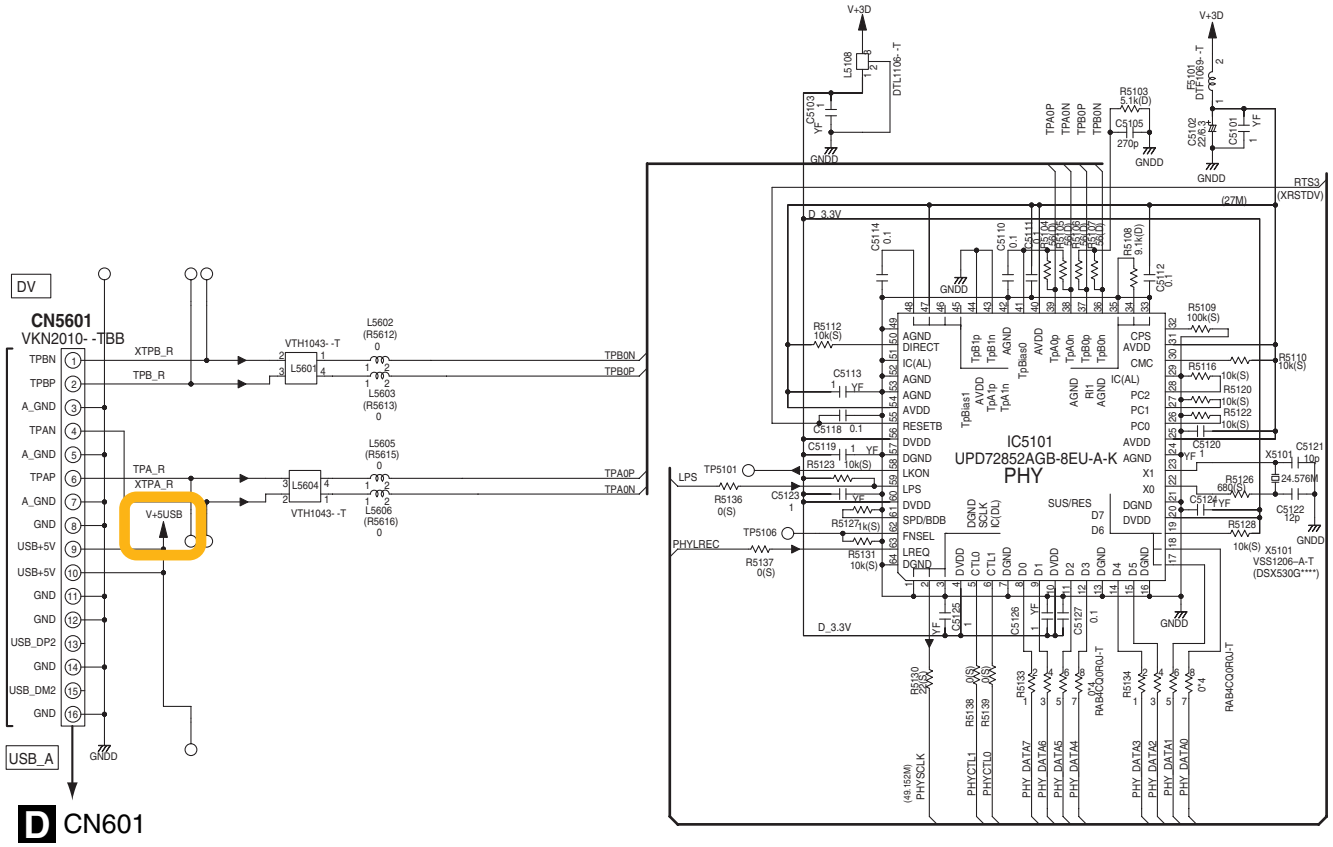


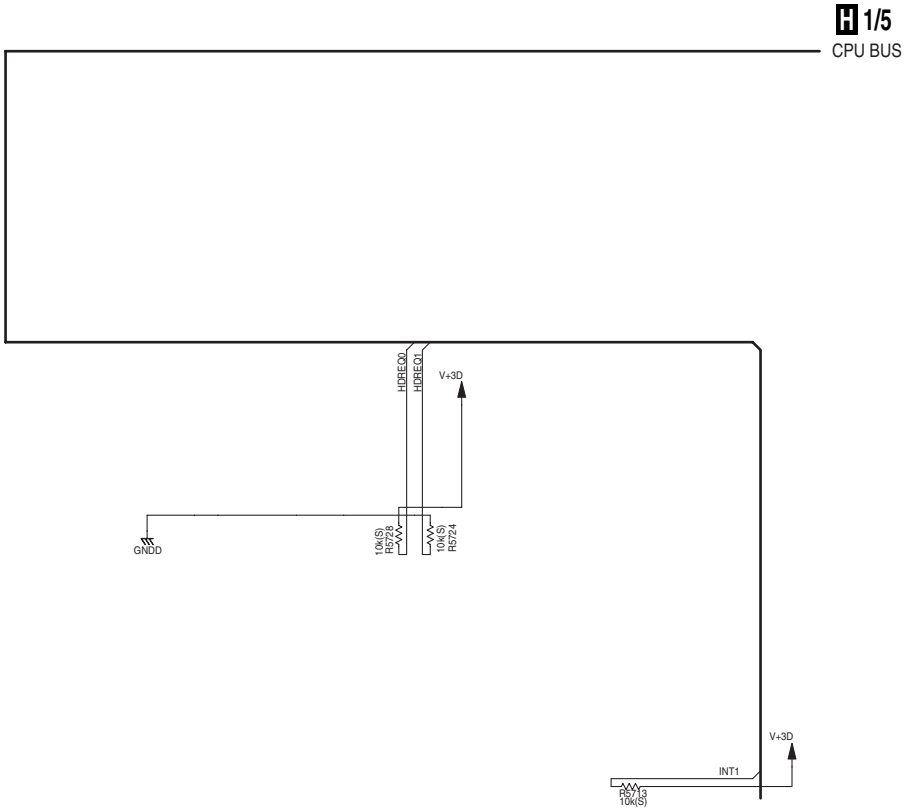
To DRIVE ASSY R9R
CN9022



3.13 MAIN ASSY(5/5)

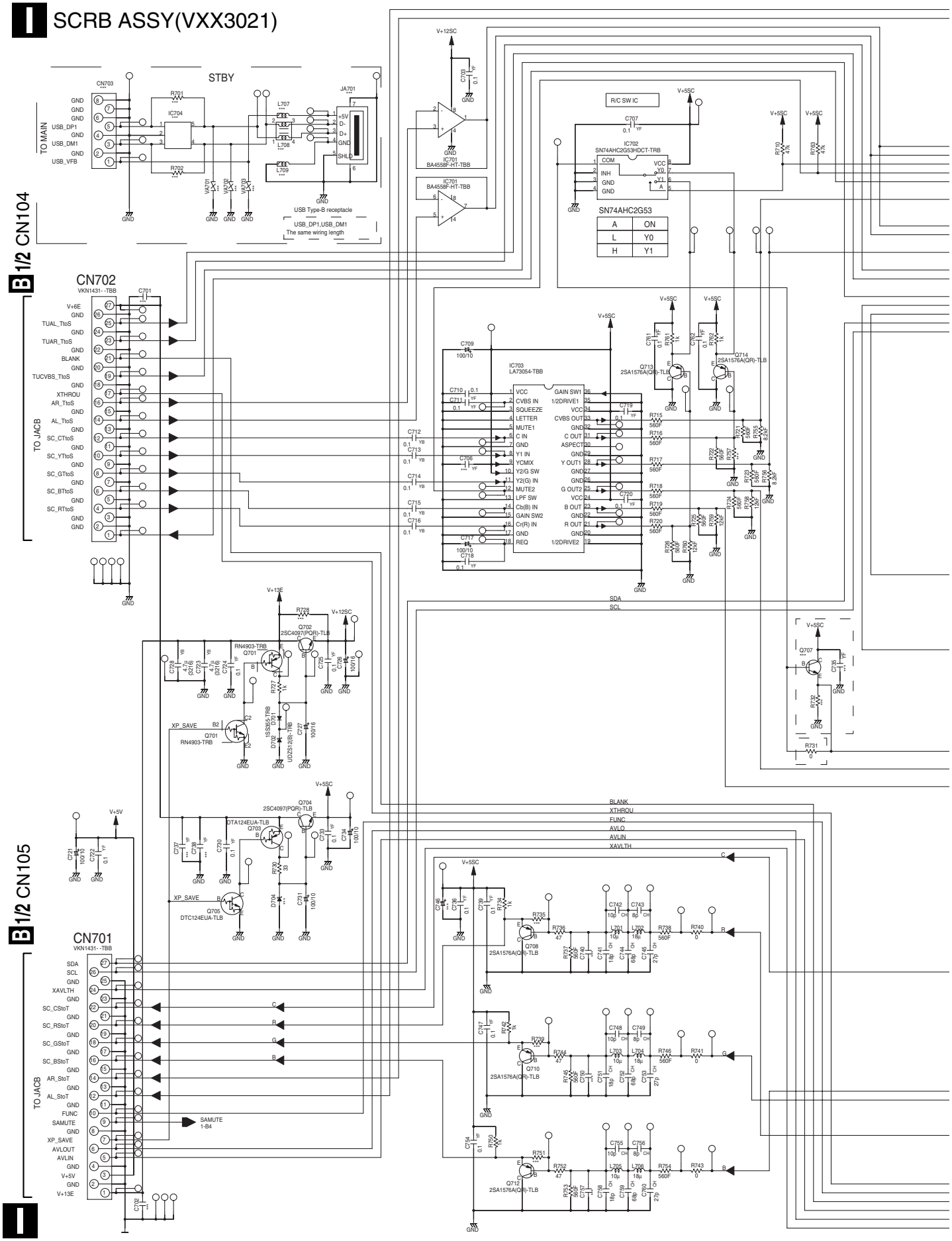
H 5/5 MAIN ASSY (VXX2997)

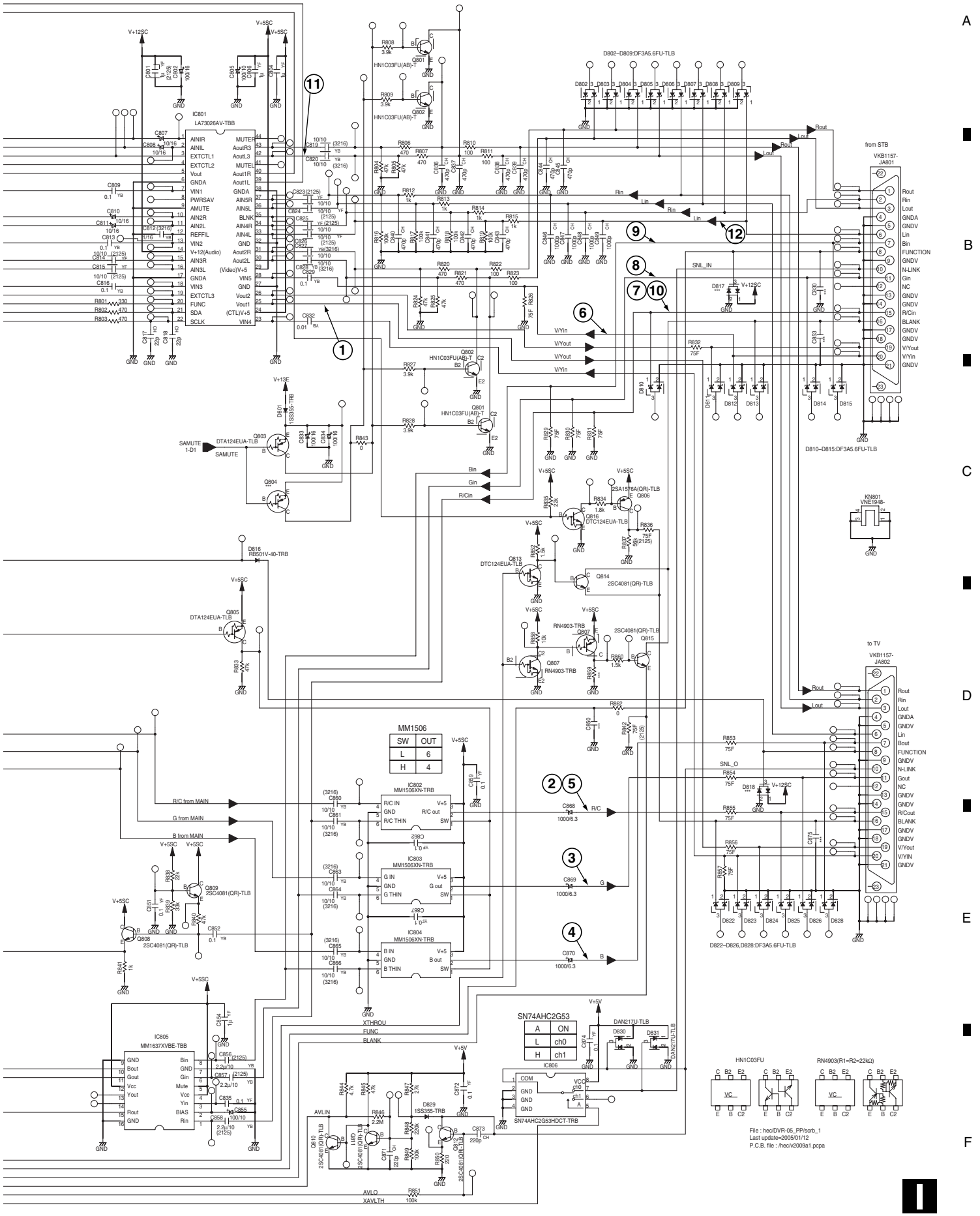



H 1/5
CPU BUS
HDREQ0
HDREQ1
V+3D
GNDD
10k(S)
RS718
10k(S)
RS724
V+3D
INT1
RS713
10k(S)

3.14 SCRB ASSY

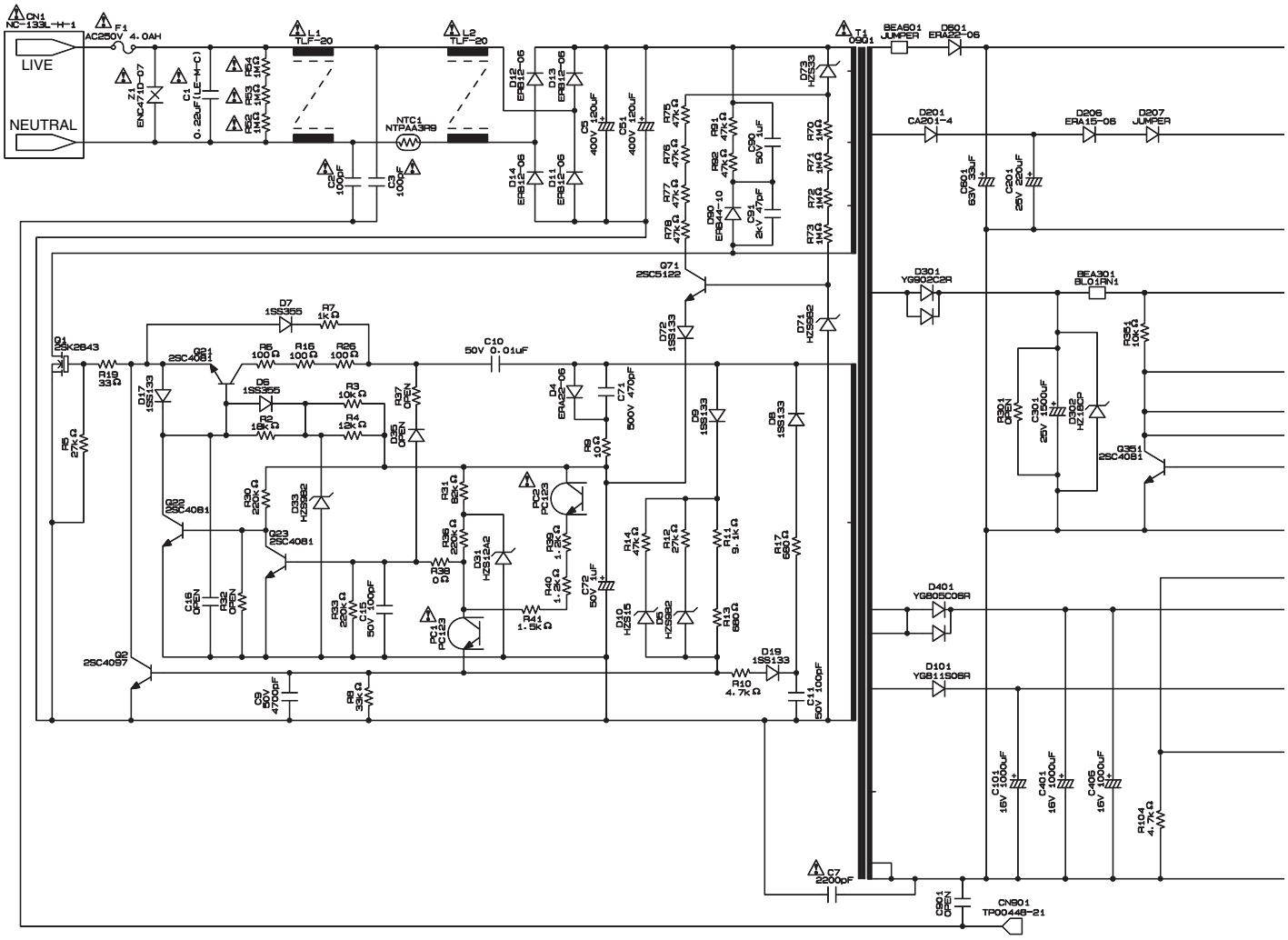
SCRB ASSY(VXX3021)




IC801
LA73026AV-TBB
AINIR
AINIL
EXTCTL1
EXTCTL2
Vout
GNDA
VIN1
PWRSAV
AMUTE
AIN2R
AIN2L
REFFIL
VIN2
V+12(Audio)
AIN3R
AIN3L
GNDA
VIN3
EXTCTL3
FUNC
SDA
SCLK
MUTER
AoutR3
AoutL3
MUTEL
Aout1R
Aout1L
GNDA
AIN5R
AIN5L
BLNK
AIN4R
AIN4L
GND
Aout2R
Aout2L
(Video)V+5
VIN5
GND
Vout2
Vout1
(CTL)V+5
VIN4
V+12SC
V+5SC
V+13E
GND
SAMUTE
SAMUTE 1-D1
DTA124EUA-TLB
HN1C03FU(AB)-T
2SC4081(QR)-TLB
RN4903-TRB
DSA1576A(QR)-TLB
DTC124EUA-TLB
1SS355-TRB
RB501V-40-TRB
D802–D809:DF3A5.6FU-TLB
D810–D815:DF3A5.6FU-TLB
D822–D826,D828:DF3A5.6FU-TLB
from STB
VKB1157-JA801
to TV
VKB1157-JA802
KN801
VNE1948-
SNL_IN
SNL_O
Rout
Lout
Rin
Lin
Bin
Gin
R/Cin
V/Yin
V/Yout
FUNCTION
GNDV
N-LINK
BLANK
NC
Gout
Bout
R/Cout
MM1506
SW OUT
L 6
H 4
IC802
MM1506XN-TRB
IC803
MM1506XN-TRB
IC804
MM1506XN-TRB
R/C IN
G IN
B IN
GND
R/C out
G out
B out
R/C THIN
G THIN
B THIN
V+5
SW
R/C from MAIN
G from MAIN
B from MAIN
R/C
G
B
1000/6.3
SN74AHC2G53
A ON
L ch0
H ch1
SN74AHC2G53HDCT-TRB
DAN217U-TLB
IC805
MM1637XVBE-TBB
IC806
XTHROU
FUNC
BLANK
AVLIN
AVLO
XAVLTH
HN1C03FU
RN4903(R1=R2=22kΩ)
File : hec/DVR-05_PP/scrb_1
Last update=2005/01/12
P.C.B. file : /hec/v2009a1.pcpa
1
2
3
4
5
6
7
8
9
10
11
12

3.15 POWER SUPPLY UNIT

J POWER SUPPLY UNIT (VWR1392)

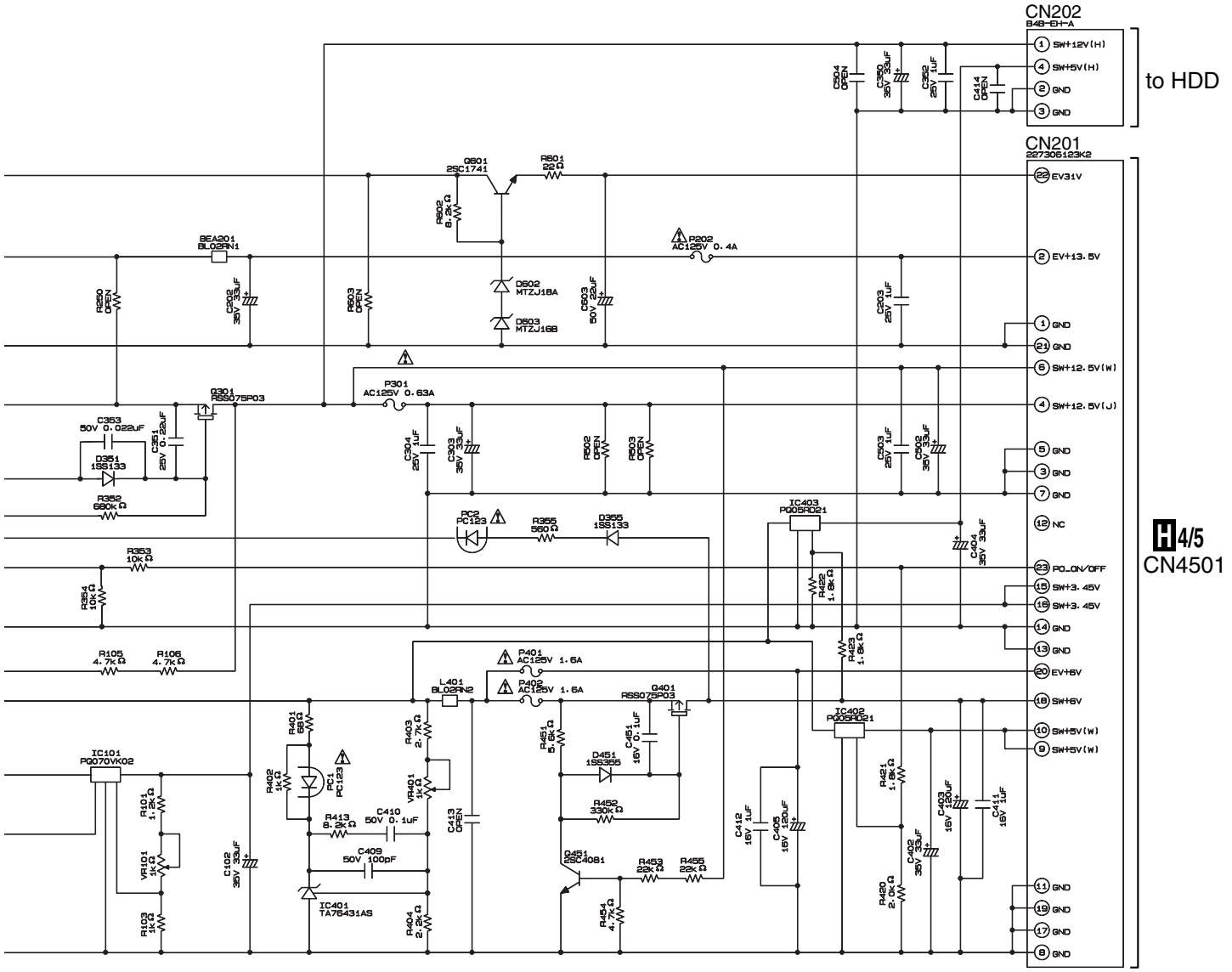


CAUTION : FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE
NO. 491.400PF002 FOR P202
MFD, BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE
NO. 491.630PF002 FOR P301
MFD, BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE
NO. 49101.6PF002 FOR P401 and
P402 MFD, BY LITTELFUSE INC.

J


CN202
B4B-EH-A
1 SW+12V(H)
4 SW+5V(H)
2 GND
3 GND
to HDD
CN201
2273061234K2
22 EV31V
2 EV+13.5V
1 GND
21 GND
6 SW+12.5V(W)
4 SW+12.5V(J)
5 GND
3 GND
7 GND
12 NC
23 PO_ON/OFF
15 SW+3.45V
16 SW+3.45V
14 GND
13 GND
20 EV+6V
18 SW+6V
10 SW+5V(W)
9 SW+5V(W)
11 GND
19 GND
17 GND
8 GND
H 4/5
CN4501
Q301 RSS075P03
Q401 RSS075P03
Q451 2SC4081
Q801 2SC1741
IC101 PQ070VK02
IC401 TA76431AS
IC402 PQ05RD21
IC403 PQ05RD21
D351 1SS133
D355 1SS133
D451 1SS355
D602 MTZJ18A
D603 MTZJ16B
PC2 PC123
PC1 PC123
P202 AC125V 0.4A
P301 AC125V 0.63A
P401 AC125V 1.6A
P402 AC125V 1.6A
L401 BL02RN2
BEA201 BL02RN1
R352 680k Ω
R353 10k Ω
R354 10k Ω
R355 560 Ω
R105 4.7k Ω
R106 4.7k Ω
R101 1.2k Ω
R103 1k Ω
R402 1k Ω
R403 2.7k Ω
R404 2.7k Ω
R413 8.2k Ω
R451 5.6k Ω
R452 330k Ω
R453 22k Ω
R454 4.7k Ω
R455 22k Ω
R422 1.8k Ω
R423 1.8k Ω
R421 1.8k Ω
R430 2.0k Ω
C353 50V 0.022uF
C351 25V 0.22uF
C354 25V 1uF
C303 35V 33uF
C503 25V 1uF
C502 35V 33uF
C203 25V 1uF
C202 35V 33uF
C404 35V 33uF
C102 35V 33uF
C410 50V 0.1uF
C409 50V 100pF
C413 OPEN
C451 16V 0.1uF
C412 16V 1uF
C405 16V 120uF
C403 16V 120uF
C411 16V 1uF
C402 35V 33uF
VR401 1k Ω
VR101 1k Ω

3.16 WAVE FORMS

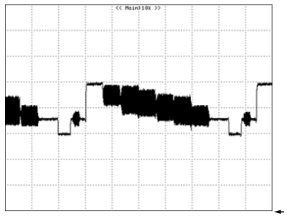
Note : The encircled numbers denote measuring point in the schematic diagram.

B JACB ASSY

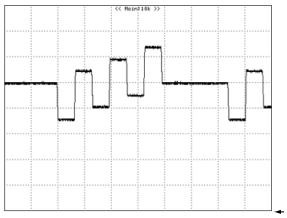
Measurement condition ;

No.1, No.16 to No.20 : 100% Color-bar
No.2 to No.15 : 100% Coloro-bar (AXP disc 1-23)
No.21 : 1kHz, 60% MOD
No.33 : 1kHz, 0dB, 2Vrms (48kHz/16bit)(AXP disc 1-1)
No.23 : 1kHz, 0dB, 1.9Vrms

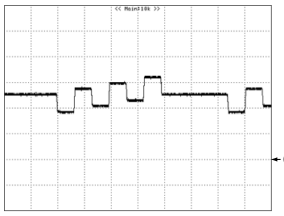
1 CN401 - pin 1 (V4-IN)
(Function :) Tuner (9ch)
V: 500mV/div. H: 10µsec/div.



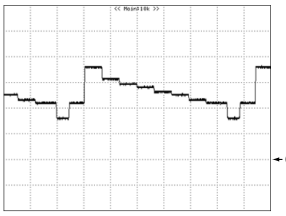
6 IC501 - pin 23 (CbOUT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



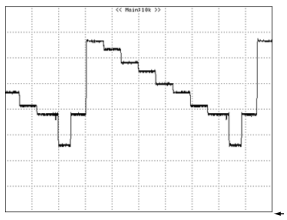
11 CN402 pin 20 (Cb/BMtoT)
(Function : DVD play)
V: 500mV/div. H: 200µsec/div.



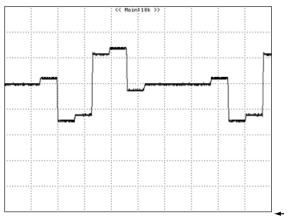
16 CN402 - pin 6 (V/YTtoM)
(Function : LINE1 IN)
V: 500mV/div. H: 10µsec/div.



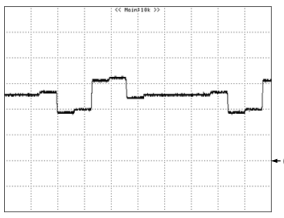
2 C518 + Side (YOUT1)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



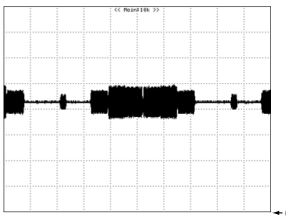
7 IC501 - pin 21 (CrOUT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



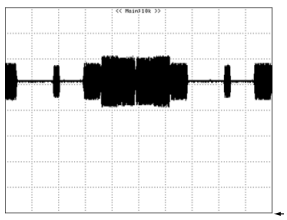
12 CN402 - pin 18 (Cr/RMtoT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



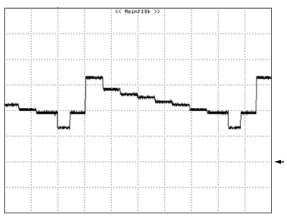
17 CN402 - pin 8 (C/RTtoM)
(Function : LINE1 IN)
V: 500mV/div. H: 10µsec/div.



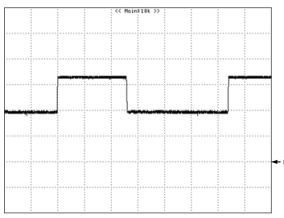
3 IC501 - pin 31 (COUT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



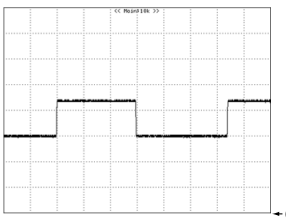
8 CN404 - pin 18 (SC_YTtoS)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



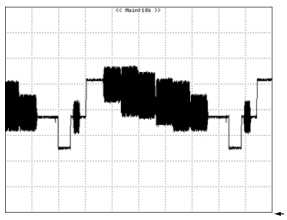
13 CN402 - pin 22 (Y/GMtoT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



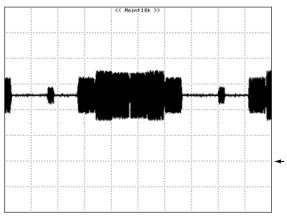
18 CN402 - pin 10 (GTtoM)
(Function : LINE1 IN)
V: 500mV/div. H: 10µsec/div.



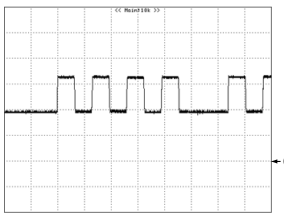
4 C517 + Side (CVBSOUT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



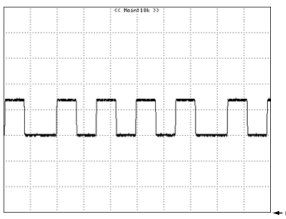
9 CN104 - pin 16 (SC_CTtoS)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



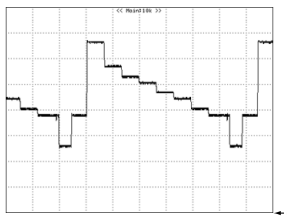
14 CN402 - pin20 (Cb/BMtoT)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



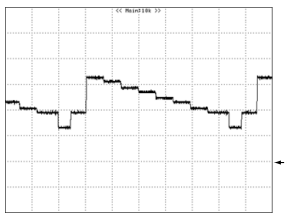
19 CN402 - pin 12 (BTtoM)
(Function : LINE1 IN)
V: 500mV/div. H: 10µsec/div.



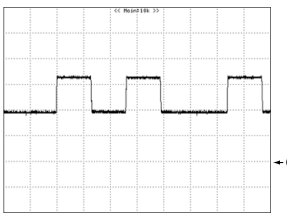
5 IC501 - pin 25 (YOUT2)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



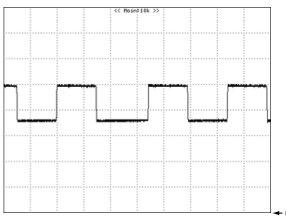
10 CN402 - pin 22 (Y/GMtoT)
(Function : Tuner 9 ch)
V: 500mV/div. H: 10µsec/div.



15 CN402 - pin 18 (Cr/RMtoT)
(Function : Tuner 9 ch)
V: 500mV/div. H: 10µsec/div.



20 CN402 - pin 8 (C/RTtoM)
(Function : LINE1 IN)
V: 500mV/div. H: 10µsec/div.



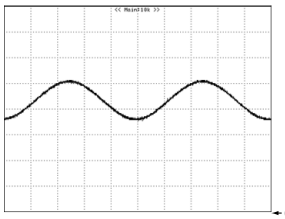
A JACB ASSY

I SCRB ASSY

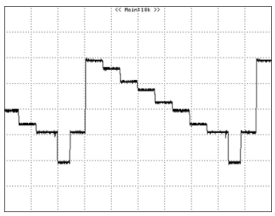
Measurement condition ;

No.6 to No.10 : 100% Color-bar
No.1 to No.5 : 100% Coloro-bar (AXP disc 1-23)
No.11 : 1kHz, 60% MOD
No.12 : 1kHz, 0dB, 1.9Vrms

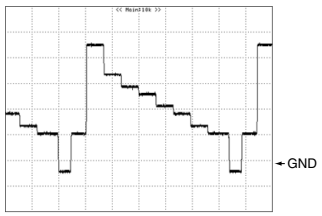
21 C152 - side (4L)
(Function : Tuner (9ch))
V: 500mV/div. H: 200µsec/div.



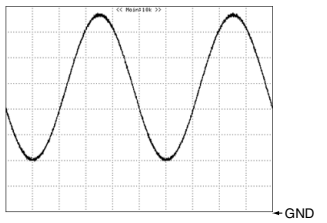
1 IC801 pin 25 (V/Yout)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



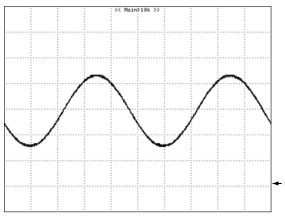
6 JA801 - pin 20 (V/Yin)
(Function : LINE 1 IN)
V: 200mV/div. H: 10µsec/div.



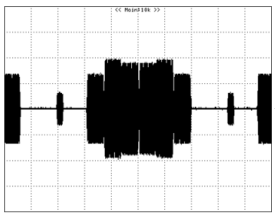
11 IC801 - pin 42 (Lout)
(Function : DVD play)
V: 1V/div. H: 200µsec/div.



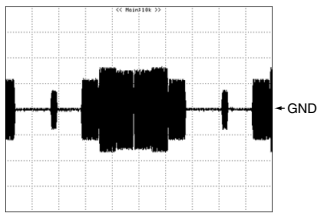
22 C8016 + side (LOUT)
(Function : DVD PLAY)
V: 2V/div. H: 200µsec/div.



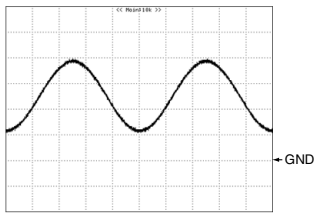
2 C868 – side (R/Cout)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



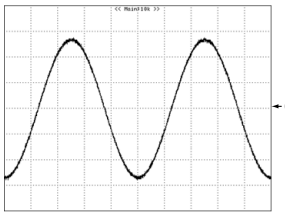
7 JA801 - pin 15 (R/Cin)
(Function : LINE 1 IN)
V: 200mV/div. H: 10µsec/div.



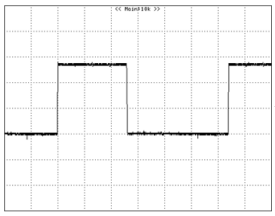
12 JA801 - pin 6 (Lin)
(Function : LINE 1 IN)
V: 1V/div. H: 200µsec/div.



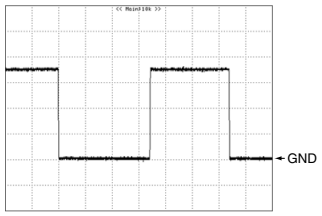
23 CN402 - pin 4 (ALTtoM)
(Function : LINE 1 IN)
V: 1V/div. H: 200µsec/div.



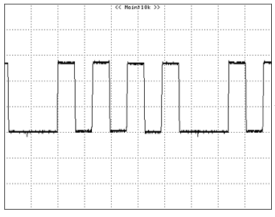
3 C869 – side (Gout)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



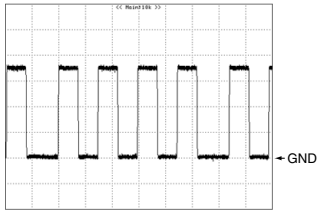
8 JA801 - pin 11 (Gin)
(Function : LINE 1 IN)
V: 200mV/div. H: 10µsec/div.



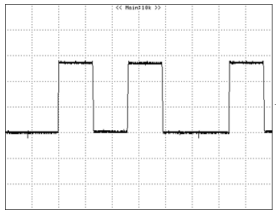
4 C870 – side (Bout)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.



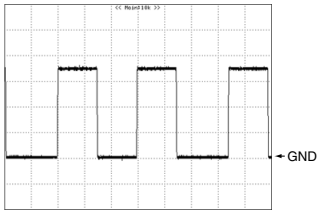
9 JA801 - pin 7 (Bin)
(Function : LINE 1 IN)
V: 200mV/div. H: 10µsec/div.



5 C868 – side (R/Cout)
(Function : DVD play)
V: 500mV/div. H: 10µsec/div.

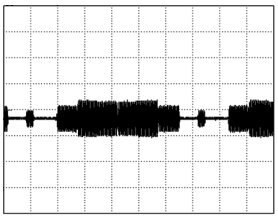


10 JA801 - pin 15 (R/Cin)
(Function : LINE 1 IN)
V: 200mV/div. H: 10µsec/div.

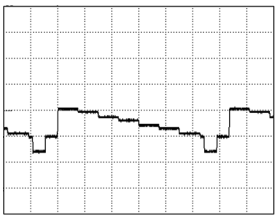


H MAIN ASSY

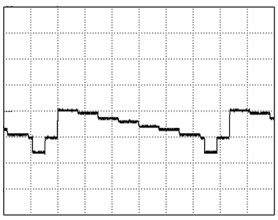
1 CN2201 - pin 26 (CMtoT)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



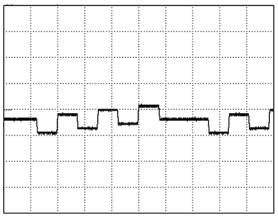
2 CN2201 - pin 24 (YMtoT)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



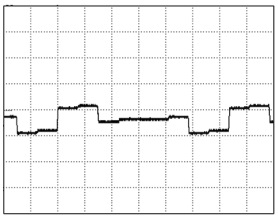
3 CN2201 - pin 22 (Y/GMtoT)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



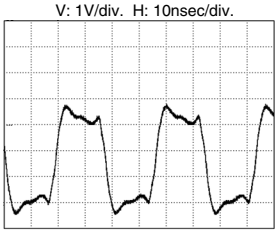
4 CN2201 - pin 20 (Cb/BMtoT)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



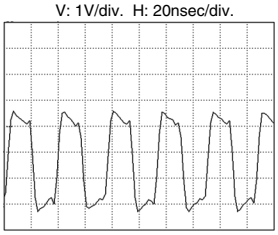
5 CN2201 - pin 18 (Cr/RMtoT)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



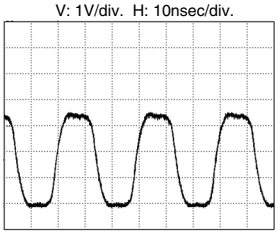
6 Foot of R3306 (VCO_VMCLK)
(State : Stopped)
V: 1V/div. H: 10nsec/div.



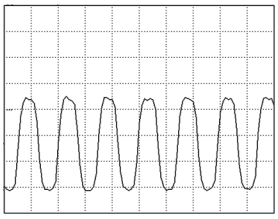
V: 1V/div. H: 20nsec/div.



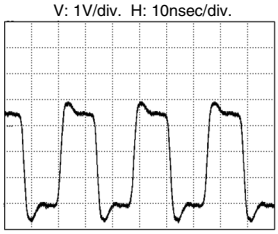
7 Foot of R3301 (VCO_AMCLK2)
(State : Stopped)
V: 1V/div. H: 10nsec/div.



V: 1V/div. H: 20nsec/div.

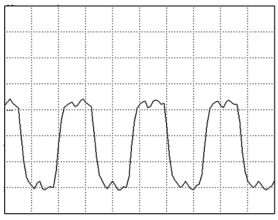


9 Foot of R3322 (VCO_AMCLK1)
(State : Stopped)
V: 1V/div. H: 10nsec/div.

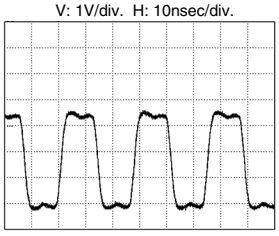


V: 1V/div. H: 20nsec/div.

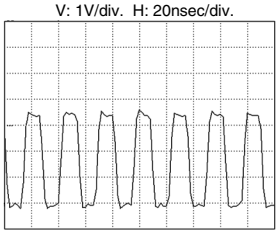
10 Foot of R3305 (VCO_18M)
(State : Stopped)
V: 1V/div. H: 20nsec/div.



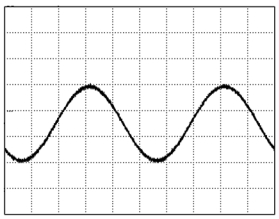
11 Foot of R3318 (VCO_33_36M)
(State : Stopped)
V: 1V/div. H: 10nsec/div.



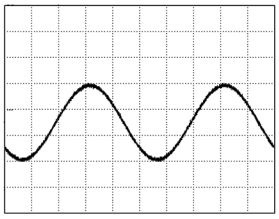
V: 1V/div. H: 20nsec/div.



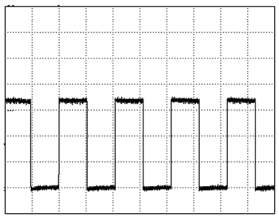
12 Foot of R3108 (LCHIN)
(State : Stopped)
V: 1V/div. H: 200µsec/div.



13 Foot of R3109 (RCHIN)
(State : Stopped)
V: 1V/div. H: 200µsec/div.

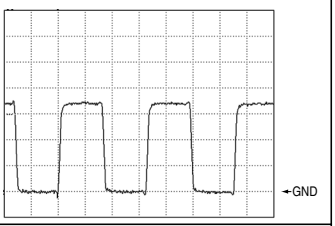


14 Foot of R3106 (AD_LRCKI)
(State : Stopped)
V: 1V/div. H: 10µsec/div.

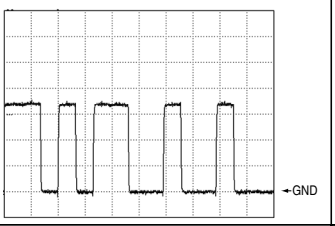


H MAIN ASSY

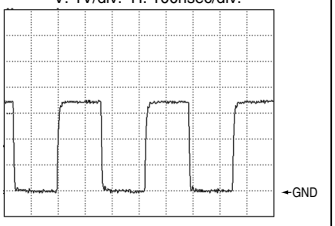
15 Foot of R3104 (AD_BCKI)
(State : Stopped)
V: 1V/div. H: 100nsec/div.



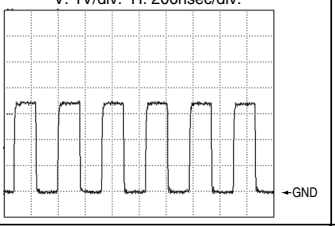
16 Foot of R3107 (AD_ADATAI)
(State : Stopped)
V: 1V/div. H: 500nsec/div.



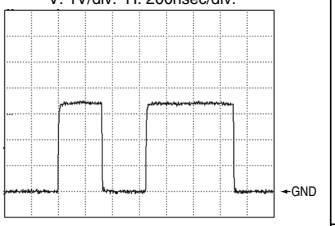
17 Foot of R3227 (DA_BCKO)
(State : Stopped)
V: 1V/div. H: 100nsec/div.



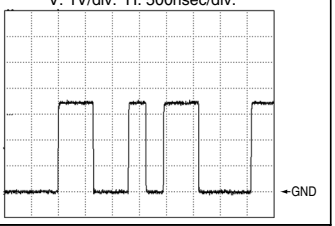
V: 1V/div. H: 200nsec/div.



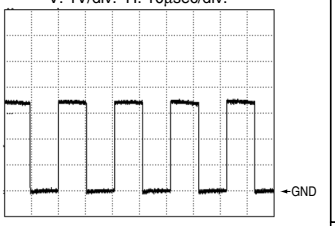
18 Foot of R3228 (DA_ADATAO)
(State : Stopped)
V: 1V/div. H: 200nsec/div.



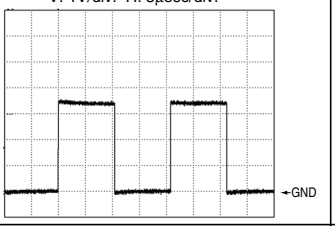
V: 1V/div. H: 500nsec/div.



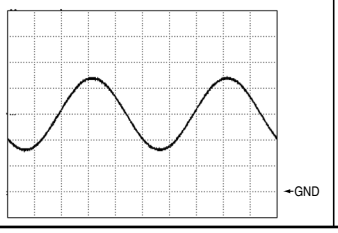
19 Foot of R3230 (DA_LRCKO)
(State : Stopped)
V: 1V/div. H: 10µsec/div.



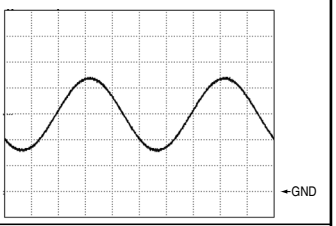
V: 1V/div. H: 5µsec/div.



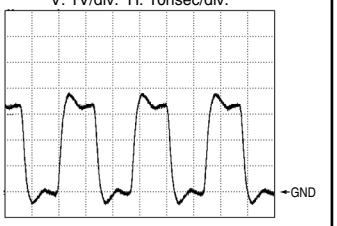
20 IC3202 - pin 7 (LCHOUT)
(State : Stopped)
V: 2V/div. H: 200µsec/div.



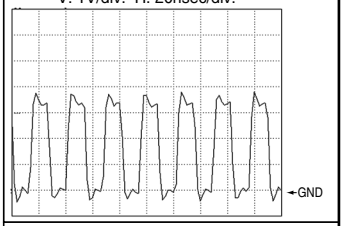
21 IC3202 - pin 1 (RCHOUT)
(State : Stopped)
V: 2V/div. H: 200µsec/div.



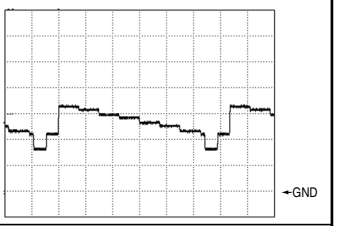
22 IC3201 - pin 16 (DA_33_36M)
(State : Stopped)
V: 1V/div. H: 10nsec/div.



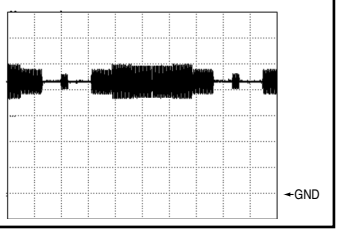
V: 1V/div. H: 20nsec/div.



23 Foot of C4290 (CVBSIN)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



24 Foot of C4278 (CCRIN)
(State : Stopped)
V: 0.5V/div. H: 10µsec/div.



5 6 7 8

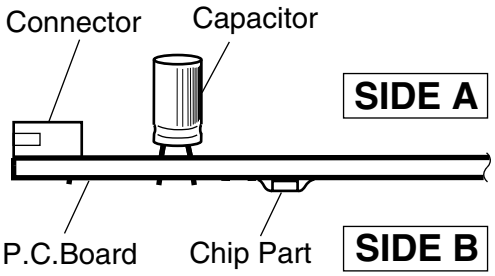
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

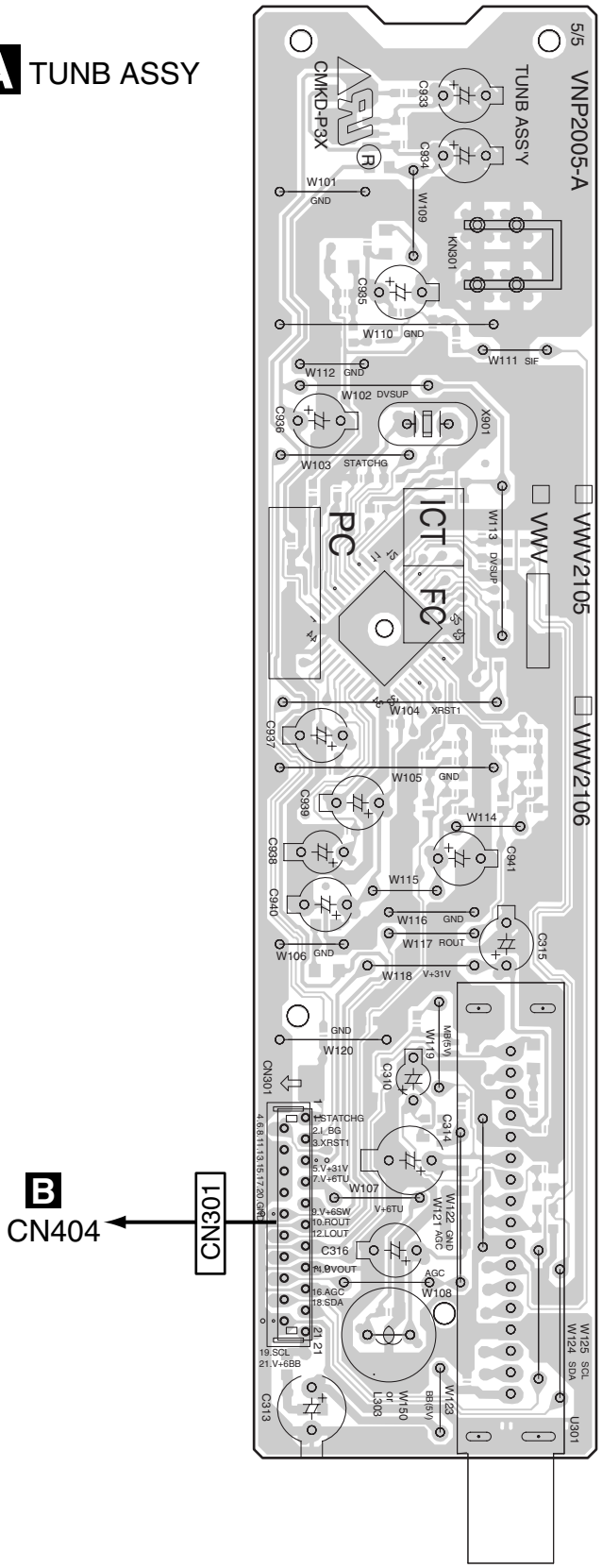
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 TUNB ASSY

SIDE A **SIDE A**

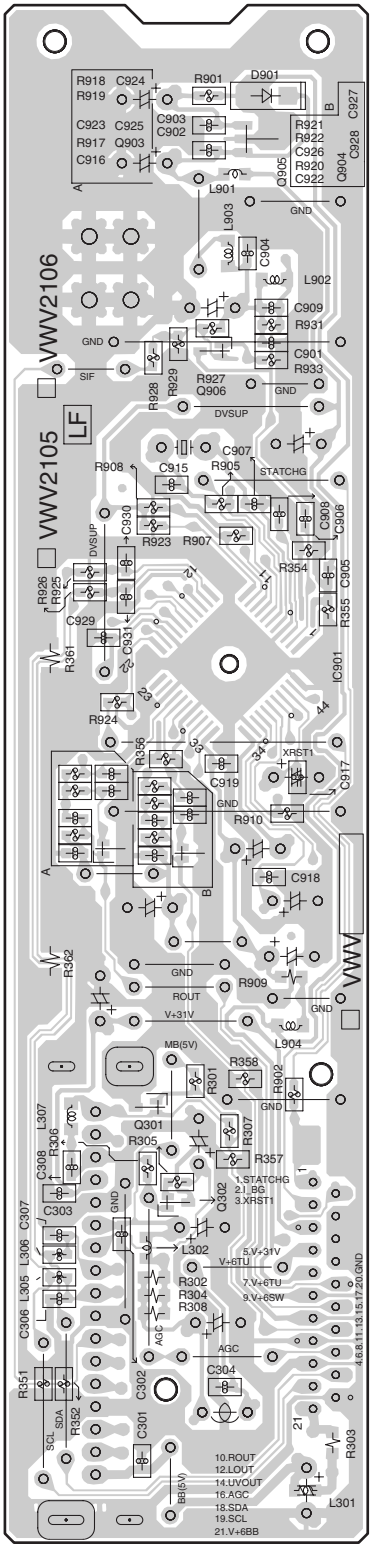
A TUNB ASSY



SIDE B

SIDE B

A TUNB ASSY



(VNP2005-B)

Q903 Q301 Q906 Q302 Q905 Q904

IC901

A

B

C

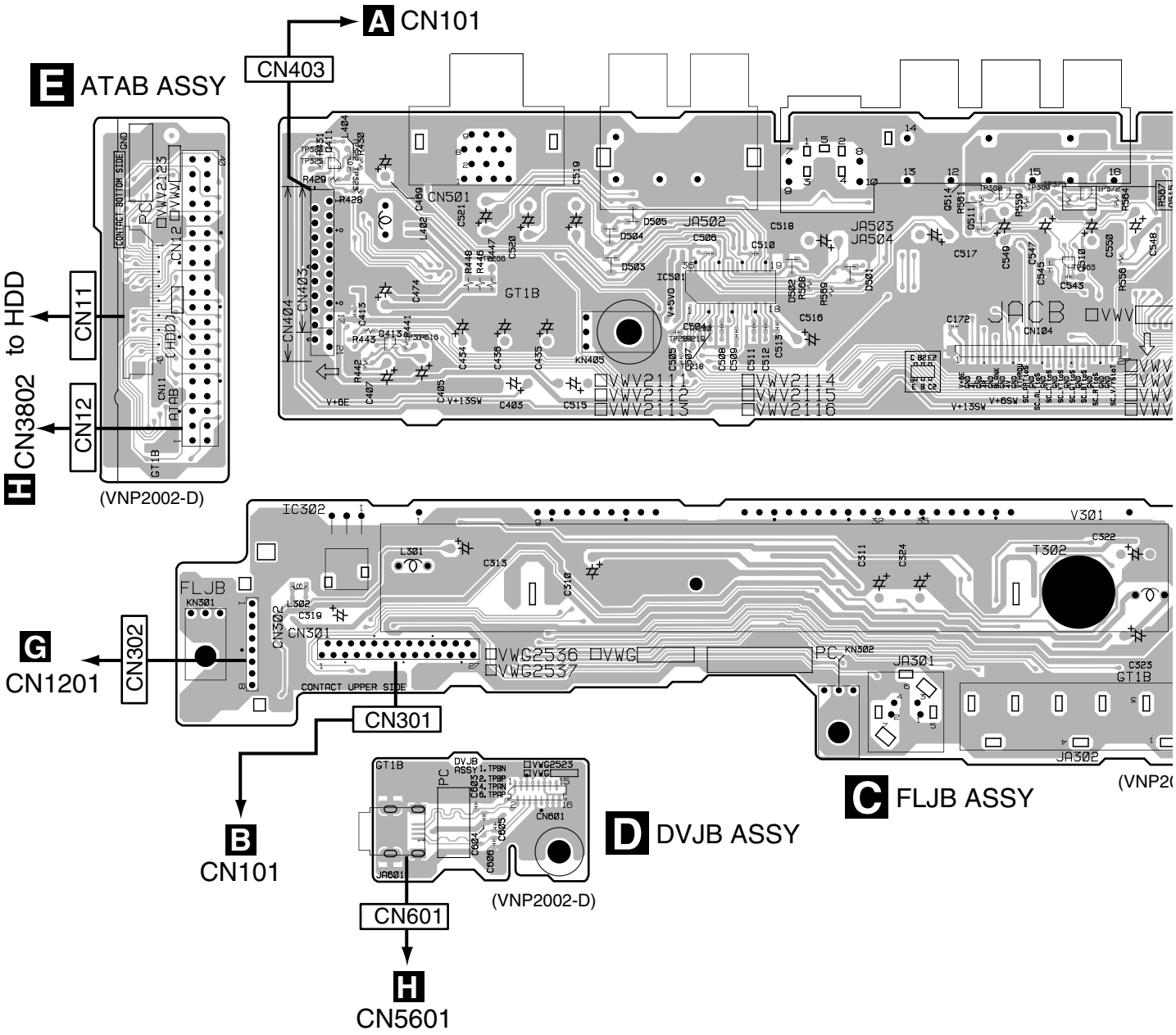
D

E

F

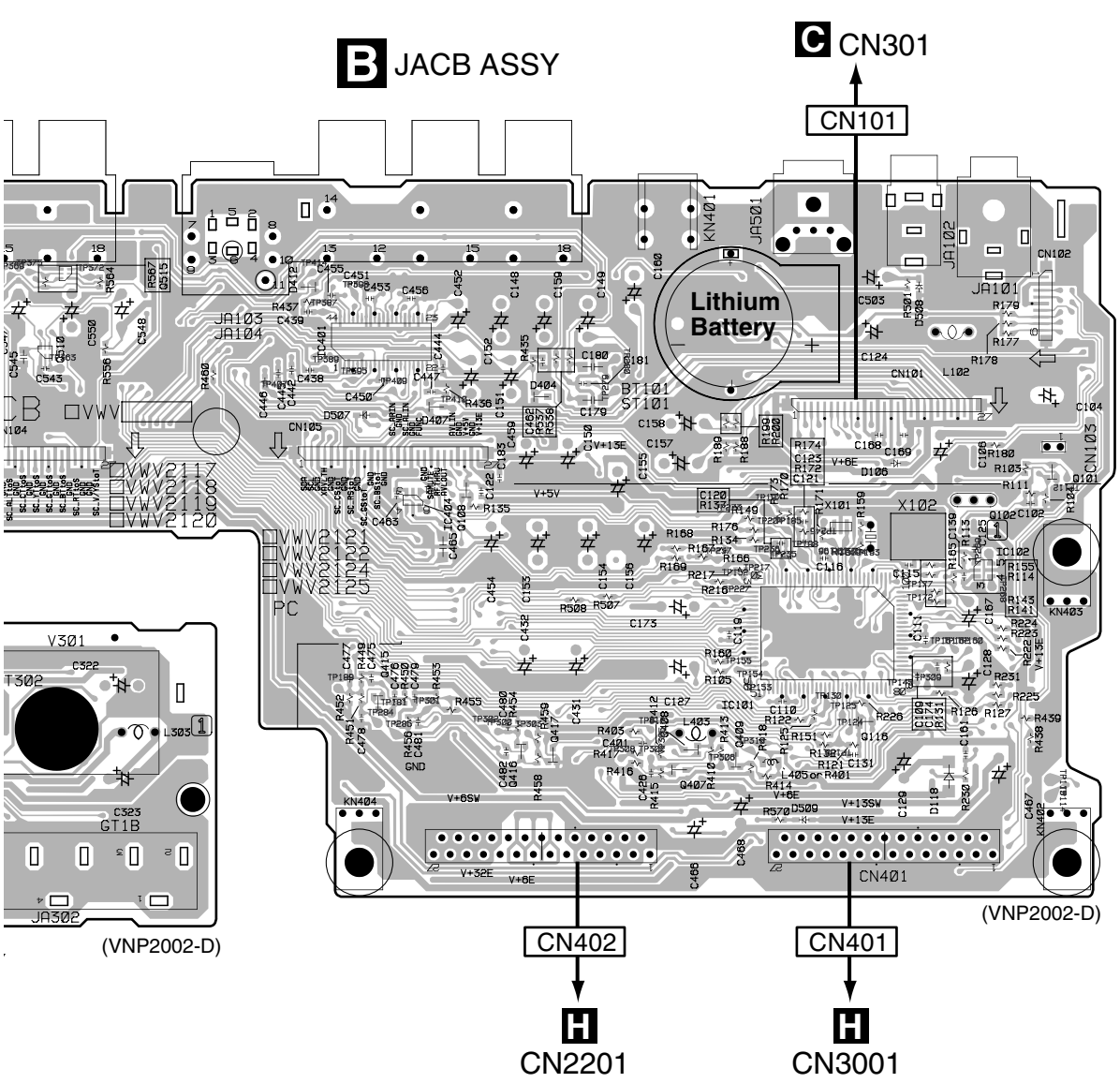
4.2 JACB, FLJB, DVJB and ATAB ASSYS

SIDE A



B C D E

SIDE A



IC | Q
Q411
Q514 Q515 Q511
IC401 IC501 Q510
Q413
Q101
IC404 Q102 Q108
IC302 IC102
Q415
IC101 Q116 Q408 Q409 Q417
Q416 Q407

SIDE B

A

B

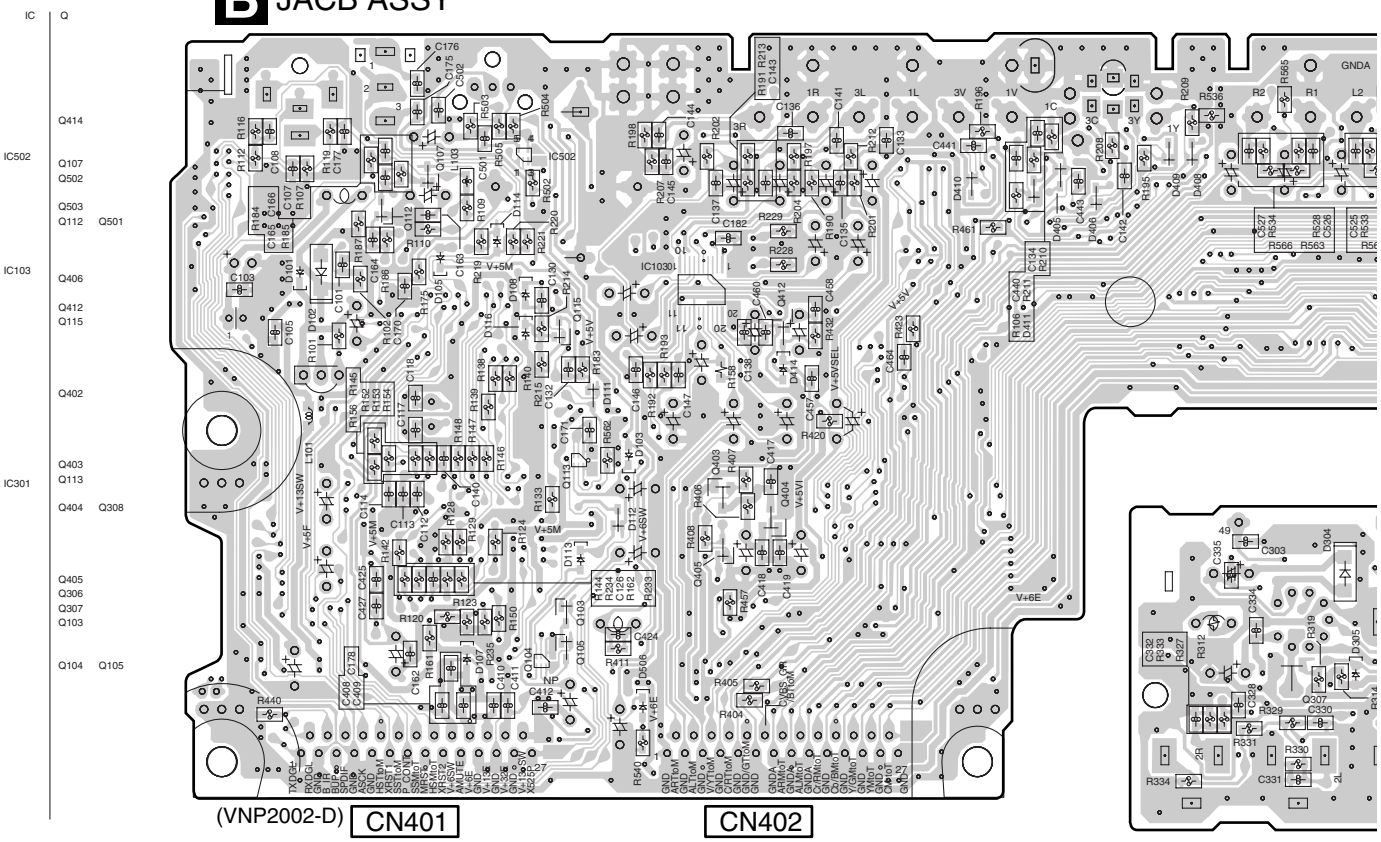
C

D

E

F

B JACB ASSY



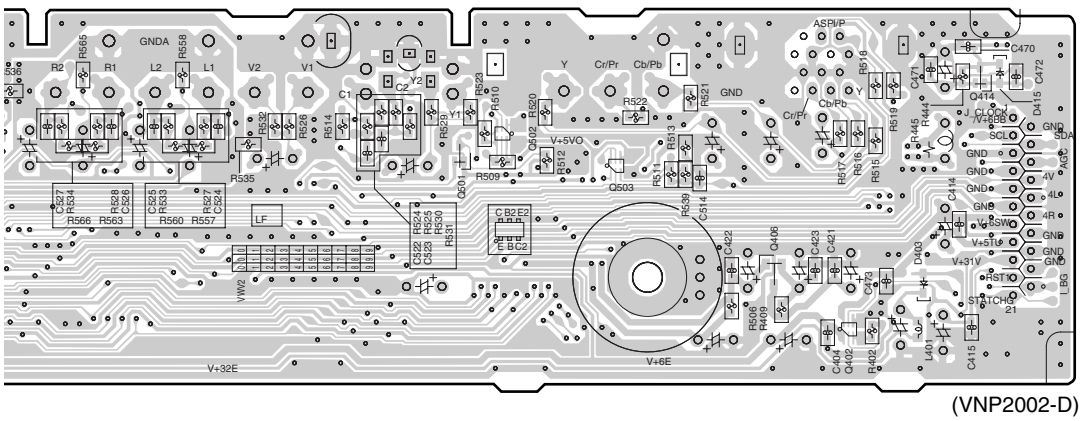
C FLJB ASSY

SIDE B

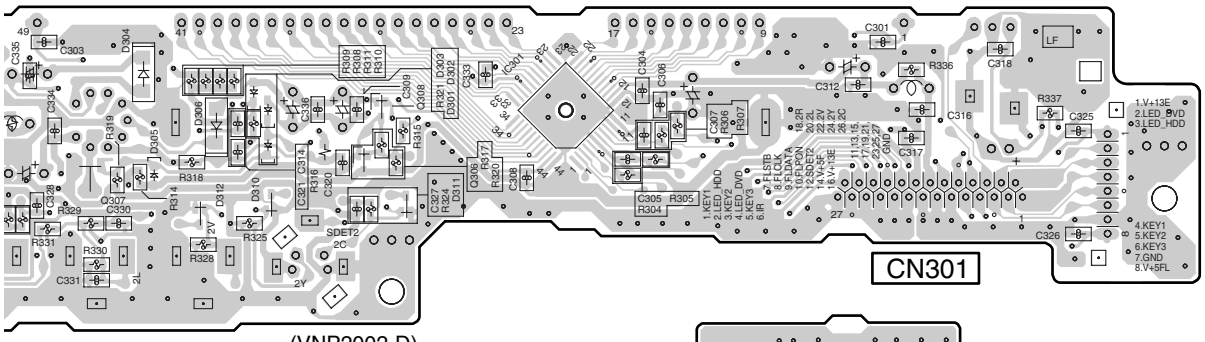
A

B

E ATAB ASSY

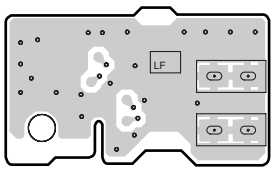


(VNP2002-D)



(VNP2002-D)

FLJB ASSY



D DVJB ASSY

(VNP2002-D)

E

F

4.3 PSWB and RSWB ASSYS

SIDE A

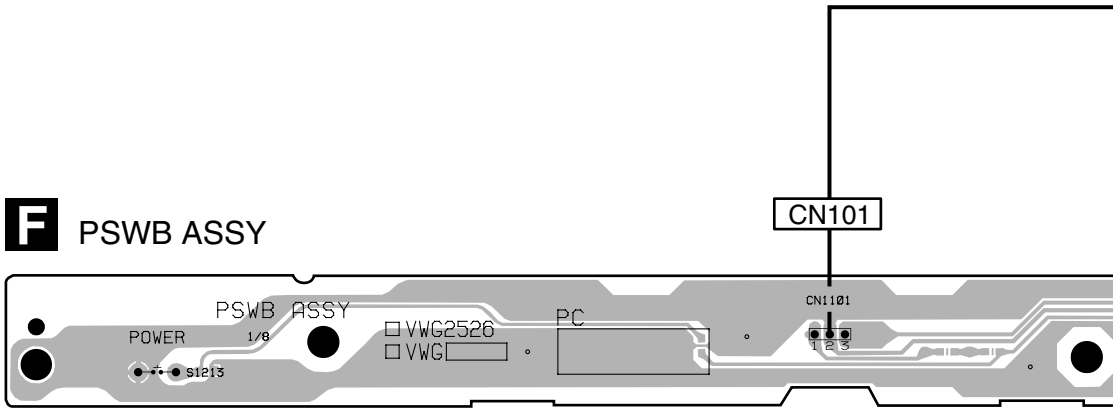
A

B

C

D

F PSWB ASSY



E

F

SIDE A

A

B

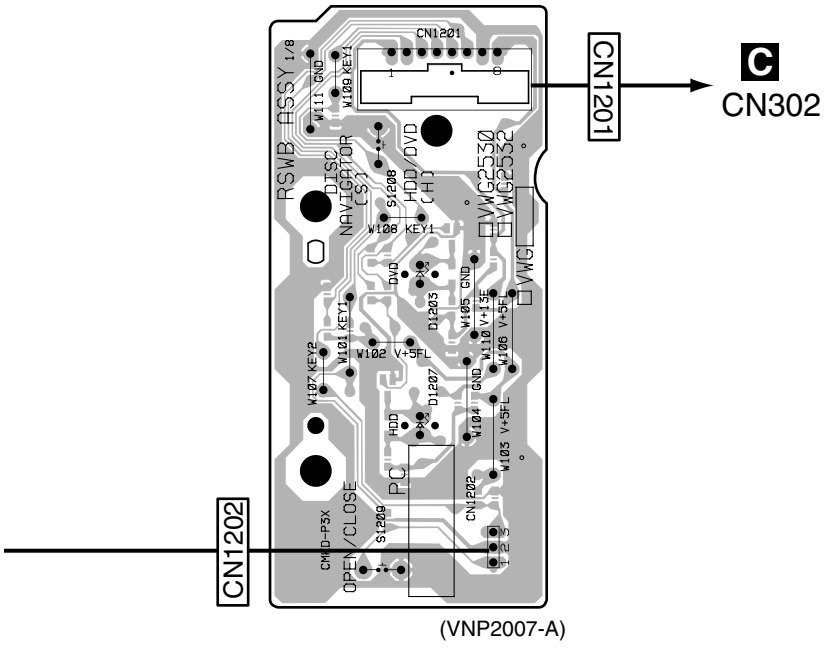
C

D

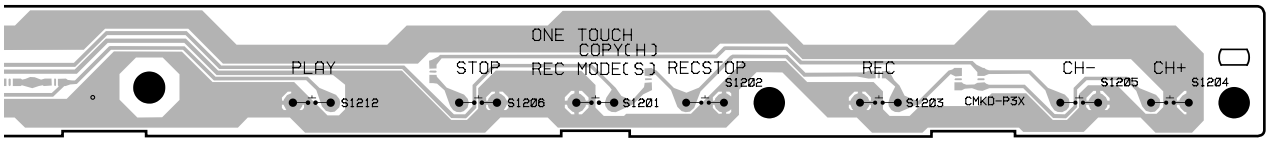
E

F

G RSWB ASSY



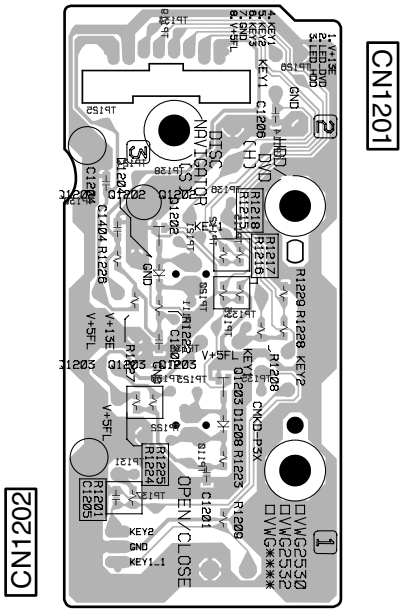
(VNP2007-A)



(VNP2007-A)

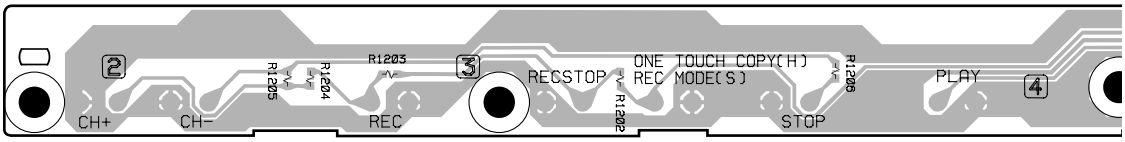
SIDE B

G RSWB ASSY



(VNP2007-A)

F PSWP ASSY



F G

SIDE B

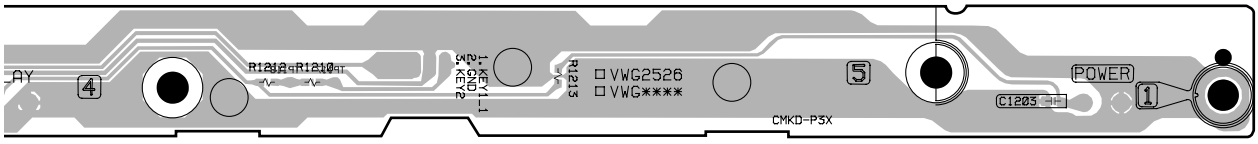
A

B

C

D

CN101



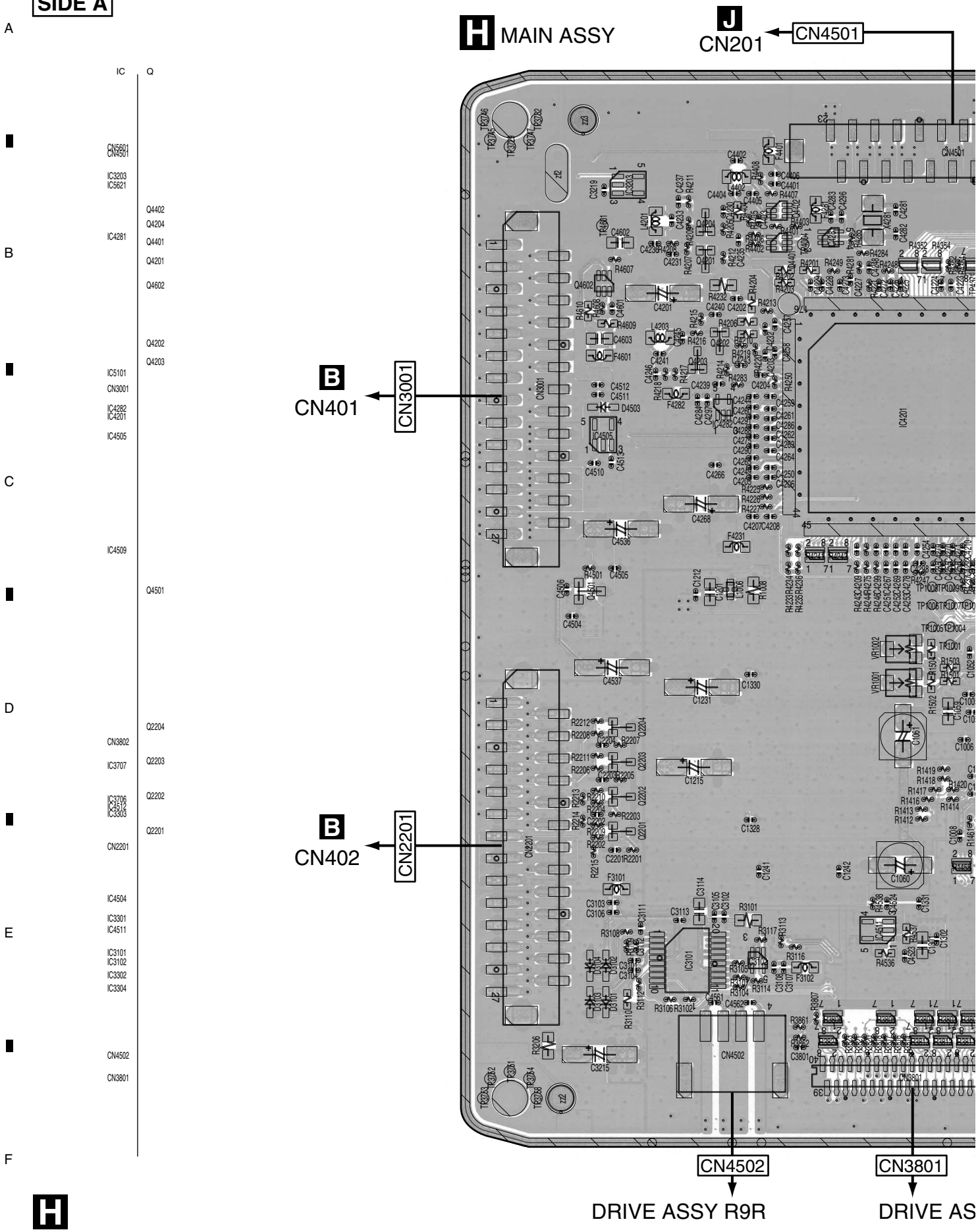
(VNP2007-A)

E

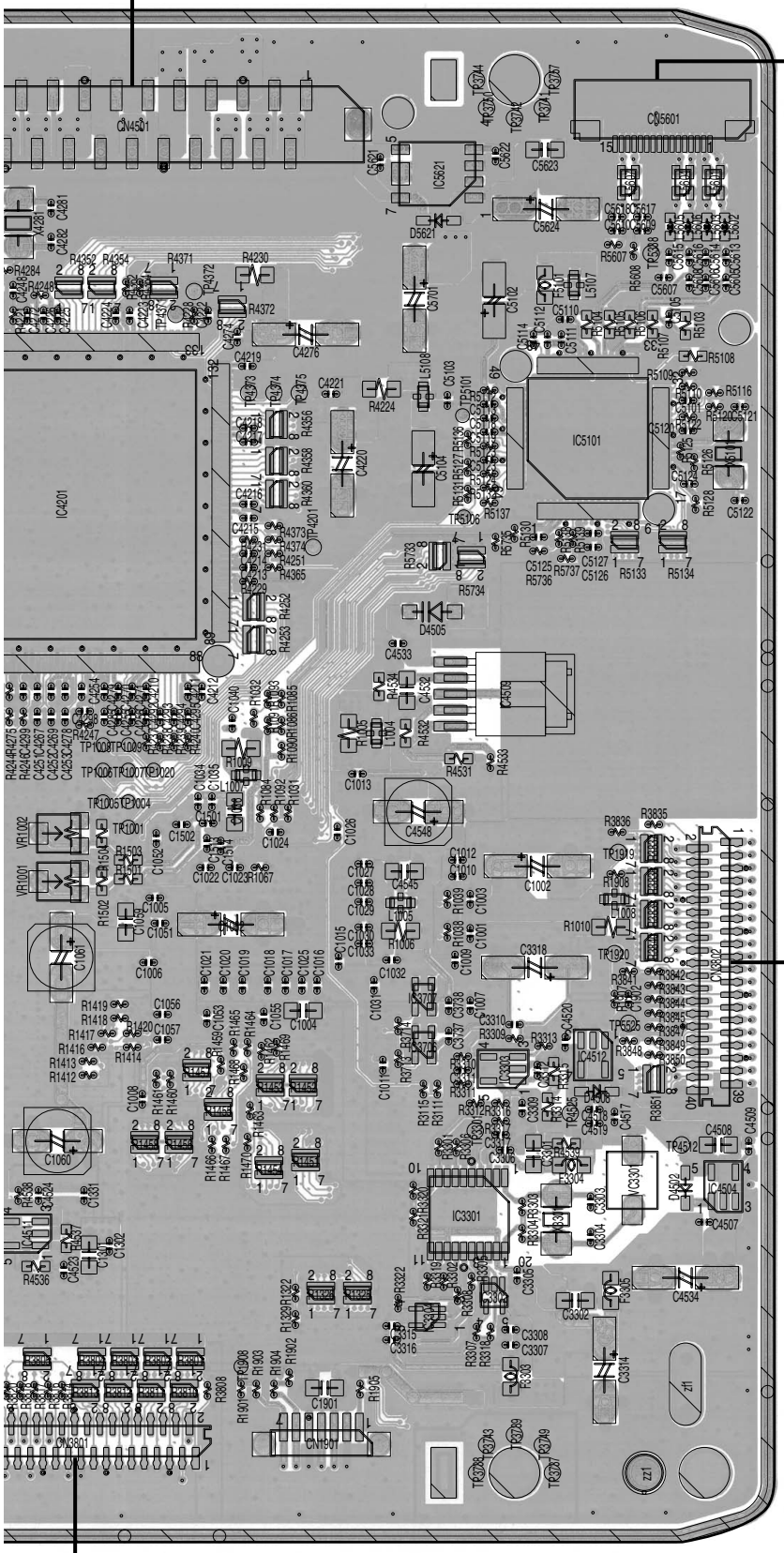
F

4.4 MAIN ASSY

SIDE A



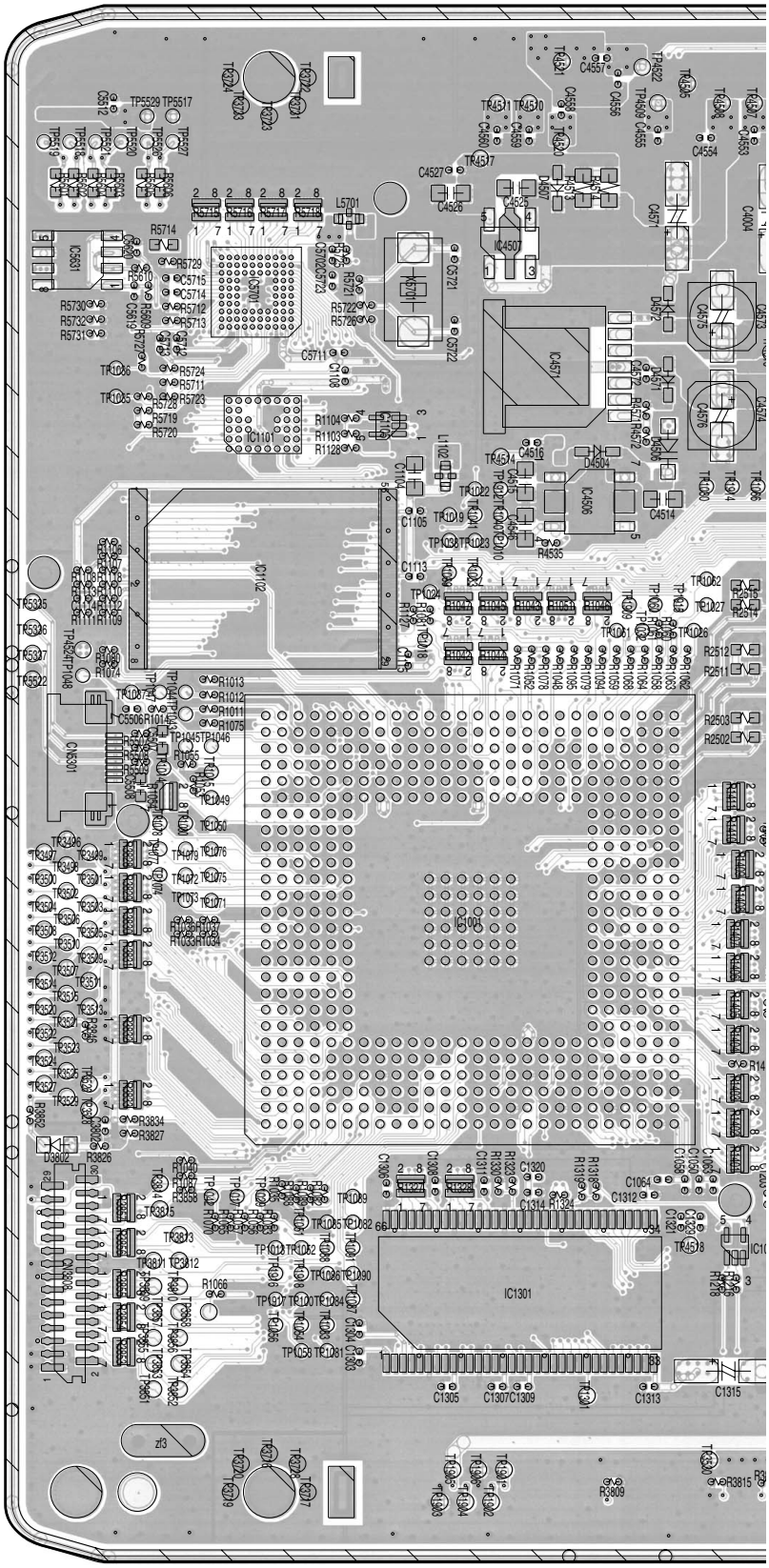
SIDE A



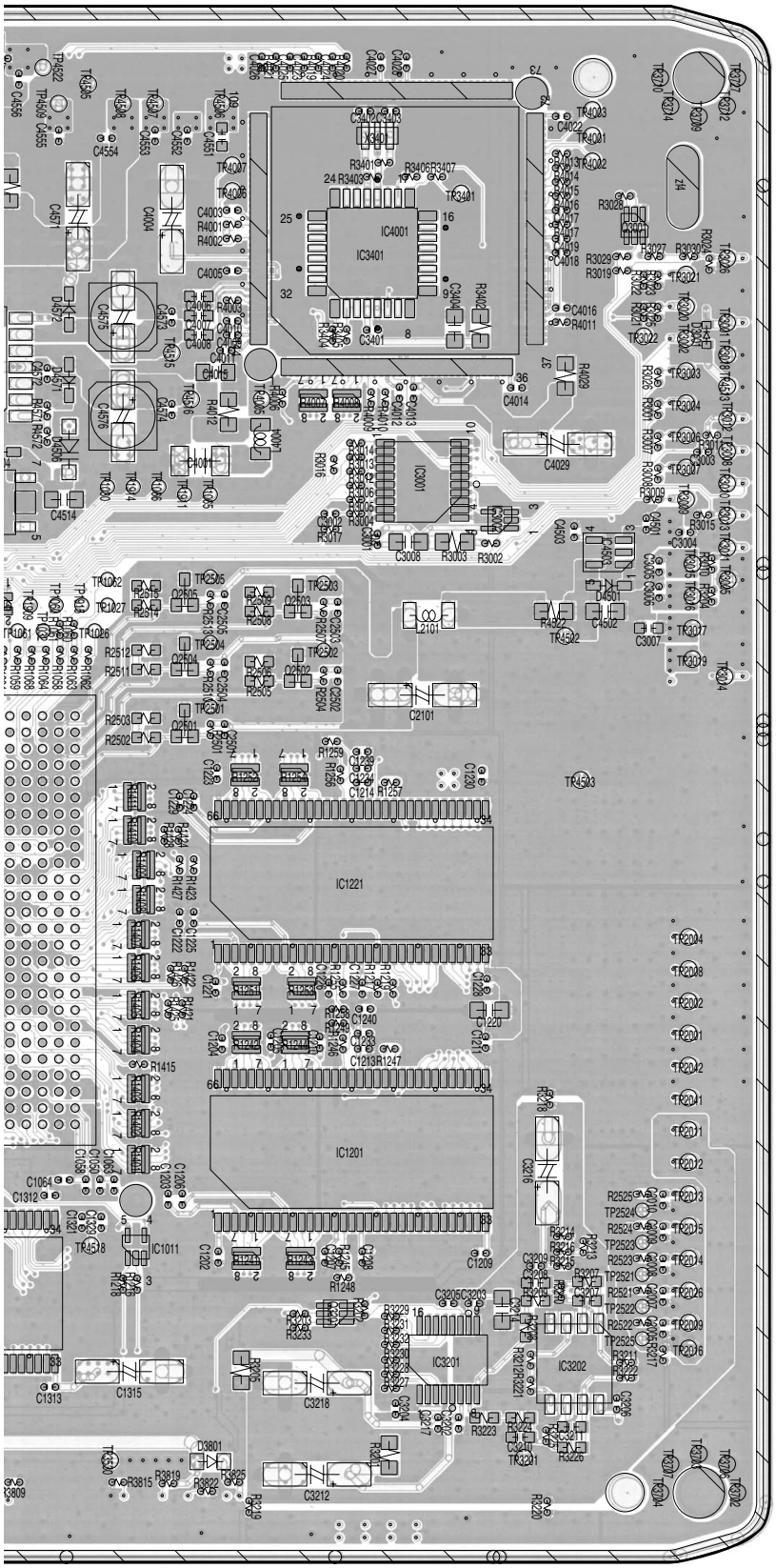
SIDE B

H MAIN ASSY

IC	Q
IC4001	Q3001
IC3401	
IC5631	
IC5701	
IC4571	
IC1101	
IC3001	
IC4506	
IC3002	
IC4503	
IC1102	
	Q2505
	Q2503
	Q2504
	Q2502
	Q2501
IC1221	
IC1001	
IC1201	
IC1011	
IC1301	
	Q3201
IC3201	
IC3202	



SIDE B



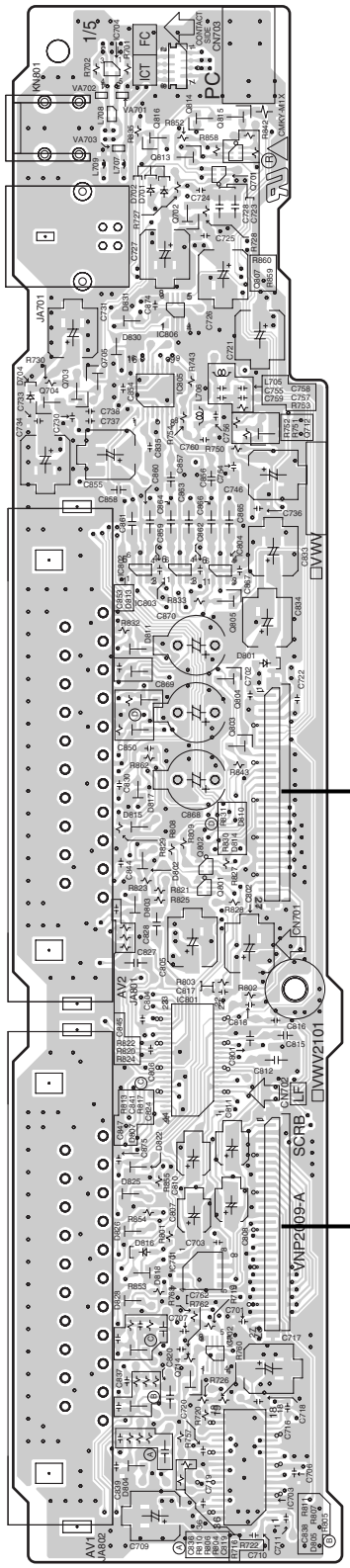
(VNP2001-D)

4.5 SCRB ASSY

SIDE A

SIDE A

I SCRB ASSY



Q805
Q702 Q815 Q804
Q712 Q704 Q705 Q816 Q802 Q701 Q712
Q714 Q801 Q807
Q703 Q813 Q814 Q803

IC703 IC704 IC806 IC801 IC805 IC802 IC702 IC804 IC703

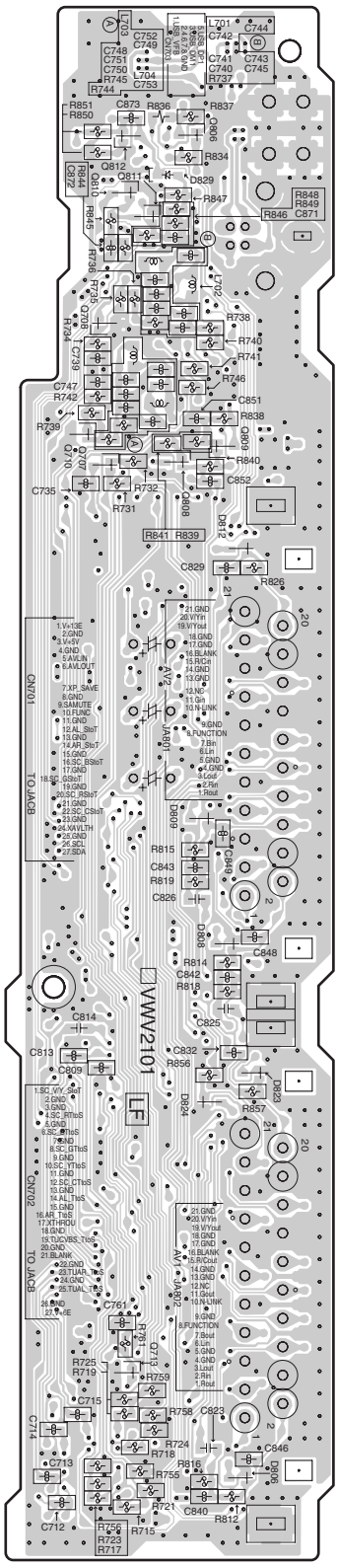
IC803 IC701

I **I**

SIDE B

SIDE B

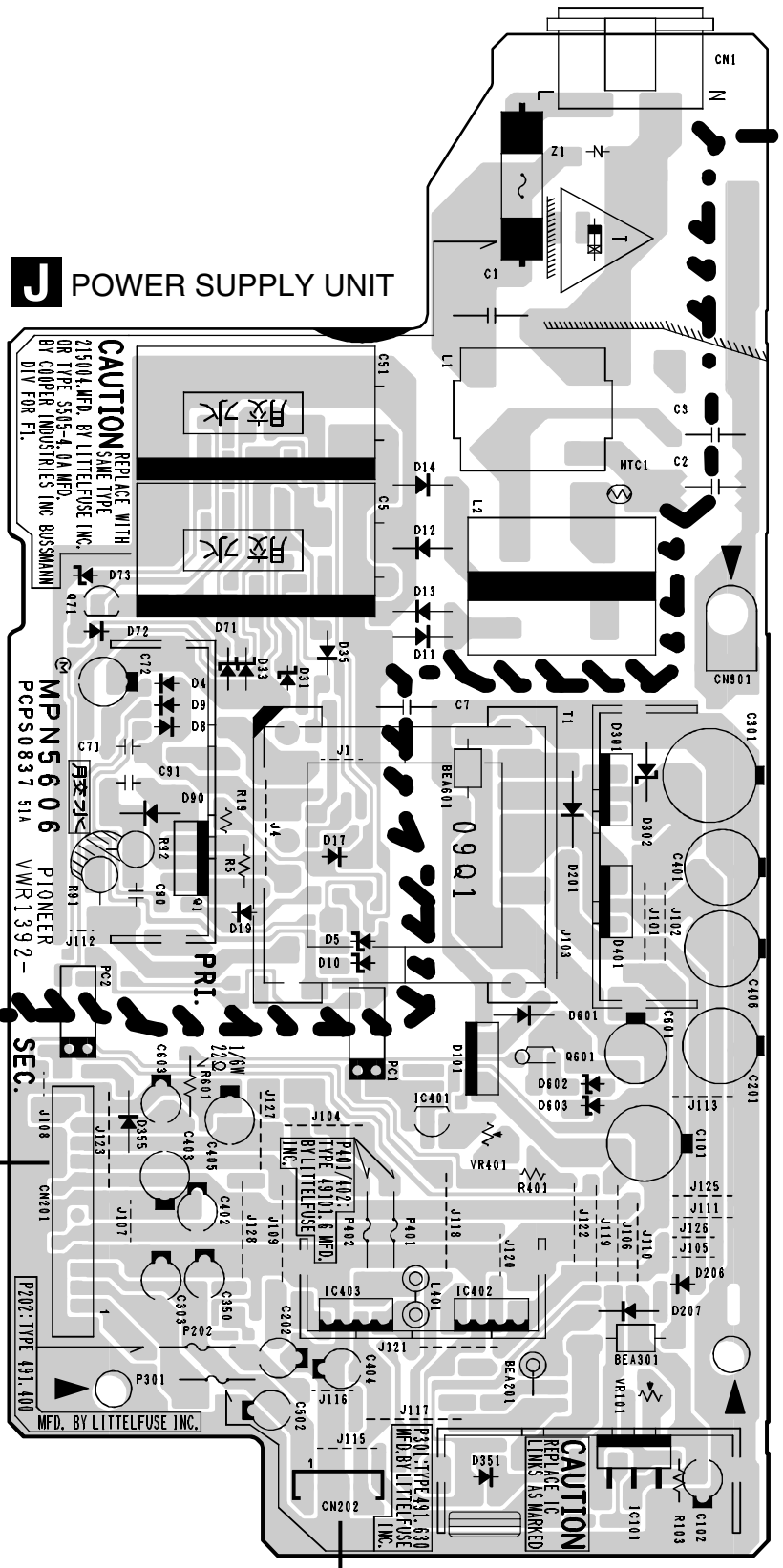
SCRB ASSY



(VNP2009-A)

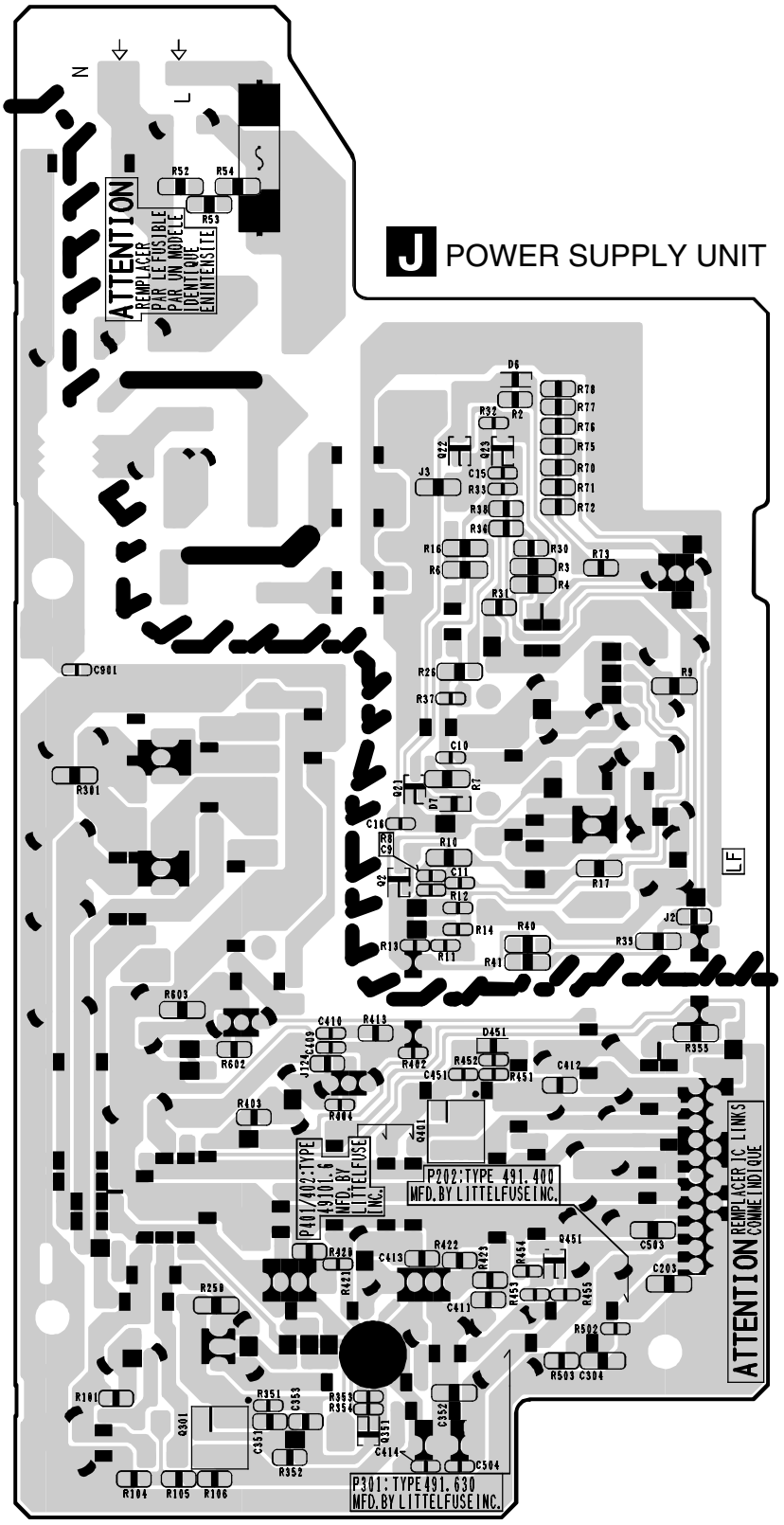
4.6 POWER SUPPLY UNIT

SIDE A **SIDE A**



SIDE B

SIDE B



J

J

5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10[1]* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10[3]* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10[1]* →	*5621*	*RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	..TUNB ASSY (for Service)	VXX3025
	1	..JAFL ASSY (for Service)	VXX3005
NSP	2	..JAFL ASSY	VWM2315
	3	..DVJB ASSY	VWG2523
	3	..FLJB ASSY	VWG2536
	3	..JACB ASSY	VWV2115
	3	..ATAB ASSY	VWV2123
	1	..KEYB ASSY (for Service)	VXX3032
NSP	2	..KEYB ASSY	VWM2332
	3	..PSWB ASSY	VWG2526
	3	..RSWB ASSY	VWG2530
	1	..MAIN ASSY (for Service)	VXX2997
	1	..SCRB ASSY (for Service)	VXX3021
⚠	1	..POWER SUPPLY UNIT	VWR1392

A TUNB ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC901		MSP3417G
	Q301, Q302, Q903, Q904		2SA1576A
	Q906		2SC4081
	D901		1SR154-400
COILS AND FILTERS			
	L301, L302, L901		CTF1399
	L902		LCYA100J2520
	L903, L904		LCYA101J2520
	L305, L306		VTL1081
CAPACITORS			
	C909		CCSRCH101J50
	C930, C931		CCSRCH220J50
	C906, C908		CCSRCH560J50
	C925, C928		CCSRCH561J50
	C907, C915		CCSRCJ3R0C50
	C937, C939		CEAL100M50
	C934-C936, C940, C941		CEAL101M10
	C310		CEAL220M6R3
	C938		CEAL3R3M50
	C313, C314		CEAT102M6R3
	C901, C923, C926		CKSRYB103K50
	C301, C302		CKSRYB222K50
	C924, C927		CKSRYB392K50
	C902, C904, C916-C919, C922		CKSRYF104Z25
	C303		CKSRYF104Z50
	C905, C929		CKSRYF105Z10
RESISTORS			
	R302, R304		RS1/10S100J
	R303, R308		RS1/10S120J
	R909		RS1/10S330J
	R361, R362		RS1/8S0R0J
	Other Resistors		RS1/16S###J
OTHERS			
	X901	CERAMIC RESONATOR	VSS1189
	KN301	WRAPPING TERMINAL	VNE1948
	CN301	21P SOCKET	XKP3081
	U301	TV TUNER PACK	VXF1060

B JACB ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC103		BD3823FV
	IC102		BD4846G
	IC401		LA73031V
	IC501		LA73054
	IC404		MM1501XN
	IC101		PMC002A8
⚠	Q403		2SA1036K
	Q107		2SA1576A
	Q102		2SB1238X
	Q404, Q406		2SC2411K
	Q101, Q108, Q112, Q407, Q409		2SC4081
	Q412		2SC4081
	Q103, Q105, Q511		DTA124EUA
	Q408		DTA143EUA
	Q116		DTC114TUA
	Q115, Q405		DTC124EUA
	Q514, Q515		HN1C03FU
	Q113, Q503, Q510		UMD2N
	Q402, Q411		UMF21N
	Q413		UMF23N
	Q104		UMH1N
	D102, D118		1SR154-400
	D105		1SS352
	D103, D107, D108, D114, D116		1SS355
	D403, D414, D506, D507, D509		1SS355
	D111		DAP202U
	D508		UDZS5R1(B)
	D404-D412		UMZ6R8N

Mark No.	Description	Part No.
COILS AND FILTERS		
L401		CTF1399
L403		LAU470J
L101		LCYA100J2520
L102		LTA102J
L103		VTL1081
CAPACITORS		
C118, C424		CCSRCH100D50
C164-C166		CCSRCH101J50
C117		CCSRCH150J50
C102		CCSRCH221J50
C140		CCSRCH331J50
C141, C144, C525, C527		CCSRCH471J50
C175		CCSRCH681J50
C149, C153, C154, C156, C160		CEAL100M50
C155, C173, C431		CEAL101M10
C104, C127		CEAL101M16
C432		CEAL101M6R3
C167		CEAL220M6R3
C129		CEAL221M10
C128		CEAL2R2M50
C148, C151, C152, C157-C159		CEAT100M50
C405, C407		CEAT100M50
C124, C403, C434, C436, C503		CEAT101M10
C515, C516		CEAT101M10
C150, C459, C547		CEAT101M16
C435		CEAT101M6R3
C517-C519		CEAT102M6R3
C548		CEAT221M6R3
C106		CEAT471M16
C452, C520, C521		CEAT471M6R3
C142, C462		CKSRYB103K50
C438-C447, C464, C507-C509		CKSRYB104K16
C511, C512		CKSRYB104K16
C130		CKSRYB105K6R3
C451		CKSRYB474K10
C103, C105, C109-C111, C116		CKSRYF104Z25
C119, C120, C122, C125, C126		CKSRYF104Z25
C132, C138, C139, C163		CKSRYF104Z25
C168-C170, C176, C178		CKSRYF104Z25
C408-C410, C412, C414		CKSRYF104Z25
C417-C419, C421-C423, C450		CKSRYF104Z25
C453, C455-C458, C460, C463		CKSRYF104Z25
C502, C504-C506, C510		CKSRYF104Z25
C513, C514, C523		CKSRYF104Z25
C411, C415		CKSRYF104Z50
C425, C426		CKSRYF105Z10
C179, C180, C465		CKSYB106K10
C549, C550 (47/16)		VCH1241
RESISTORS		
R445, R448		RS1/10S0R0J
R158		RS1/10S330J
R413		RS1/16S7500F
R195, R196, R208, R435-R437		RS1/16S75R0F
R520-R522, R529, R530, R532		RS1/16S75R0F
Other Resistors		RS1/16S###J
OTHERS		
X101 (15MHz)		CSS1666
X102 (32.768kHz)		VSS1197

Mark No.	Description	Part No.
JA101	MINI JACK(4P)	AKN1073
CN103	CONNECTOR POST	B2B-PH-K
JA102	JACK	RKN1004
BT101	LITHIUM BATTERY	VEM1034
JA104	JACK	VKB1192
JA504	JACK	VKB1193
JA502	3P PIN JACK	VKB1222
CN102	9P CONNECTOR	VKN1413
CN101, CN104, CN105	27P CONNECTOR	VKN1431
CN401, CN402	CONNECTOR	VKN2008
JA501	OPT. LINK OUT 12MB/S	VKS1001
ST101	BATTERY SOCKET	VKX1019
KN401	SCREW PLATE	VNE1948
KN403-KN405	WRAPPING TERMINAL	VNF1084
CN404	21P PLUG	XKP3070

C FLJB ASSY

SEMICONDUCTORS		
IC301		PT6315
Q306		2SA1576A
Q308		2SC4081
Q307		2SC5712
D305		1SS355
⚠D304, D306		RF101L2S
D302		UDZS13(B)
D301		UDZS15(B)
D303		UDZS2R4(B)
D310-D312		UMZ6R8N
COILS AND FILTERS		
L301, L303		LAU220J
TRANSFORMERS		
⚠T302		VTT1166
CAPACITORS		
C331, C332		CCSRCH471J50
C324		CEAL100M50
C313		CEAL101M10
C322, C323		CEAL101M16
C319		CEAT101M10
C301, C303, C321		CKSRYB103K50
C320		CKSRYB223K50
C304, C308, C312, C316-C318		CKSRYF104Z25
C325, C326, C334, C335		CKSRYF104Z25
C333, C336		CKSRYF104Z50
RESISTORS		
R316		RS1/10S221J
Other Resistors		RS1/16S###J
OTHERS		
IC302	REMOTE RECEIVER UNIT	RPM7140-H4
V301	FL TUBE	VAW1085
JA302	3PIN JACK(VERTICAL)	VKB1189
JA301	YC CONNECTOR(VERTI)	VKB1190
CN302	8P CONNECTOR	VKM1001
CN301	21P SOCKET	VKN2014
KN301, KN302	SCREW PLATE	VNF1084
0	FL HOLDER (FE)	VNF1130

Mark	No.	Description	Part No.
D		**DVJB ASSY**	
		OTHERS	
	JA601	1394-TERMINAL	VKN1800
	CN601	16P CONNECTOR	VKN2013
E		**ATAB ASSY**	
		OTHERS	
	CN12	40P ATA CONECTOR	VKN1816
	CN11	40P CONNECTOR	VKN2009
F		**PSWB ASSY**	
		SWITCHES AND RELAYS	
	S1201-S1206, S1212, S1213		VSG1024
		RESISTORS	
	Other Resistors		RS1/16S###J
		OTHERS	
	CN1101	CONNECTOR POST	S3B-PH-K
G		**RSWB ASSY**	
		SEMICONDUCTORS	
	Q1202, Q1203		DTC124EUA
	D1207	LED(BLUE)	SLR-343BBT(FGHJ)
	D1203	LED(ORANGE)	SLR-343DC(NPQ)
		SWITCHES AND RELAYS	
	S1208, S1209		VSG1024
		CAPACITORS	
	C1201, C1202, C1204-C1206, C1404		CKSRYF104Z25
		RESISTORS	
	Other Resistors		RS1/16S###J
		OTHERS	
	CN1202	CONNECTOR POST	S3B-PH-K
	CN1201	CONNECTOR	VKP2355
H		**MAIN ASSY**	
		SEMICONDUCTORS	
⚠	IC4571		BA25F18WHFP
	IC3203		BD4850G
	IC3707		BU4809F
	IC3706		BU4828F
	IC4201		CM0045AF
	IC3301		CY244ZXC-04D
	IC1201, IC1221		EDD1216AATA-6B-E
	IC1301		K4H511638B-UCB3
⚠	IC4512		NJM2861F33
⚠	IC4503, IC4504		NJM2872F05
	IC3303, IC4511		NJU7013F
	IC3201		PCM1742KE
	IC3101		PCM1802DB1
	IC3401		PDF015A
⚠	IC4509		PQ035ZN01ZPH
⚠	IC4506		R1170S331B
	IC1001		R8A34011BG
	IC3001		TC74LCX541FTS1
	IC3304		TC7SAU04FU
	IC1011, IC3002		TC7SH08FUS1
	IC4281, IC4282		TC7SHU04FUS1
	IC3202		UPC4570G2-A
	IC5101		UPD72852AGB-8EU-A
	IC1102		VYW2308
	Q2501-Q2505, Q4202, Q4203		2SA1576A
	Q4501		2SC2411K
	Q3201		RN1903
	D3101-D3104		1SS355
	D4505, D4506		RB160M-40
		COILS AND FILTERS	
	F3101, F3303-F3305, F4231		DTF1069
	F4281, F4282, F5101		DTF1069
	L1004-L1008, L1102, L5108		DTL1106
	L4203		LCYA6R8J2520
	L5601, L5604		VTH1043
	L2101		VTL1067
		CAPACITORS	
	C3207, C3211		CCSRCH121J50
	C3208, C3210		CCSRCH681J50
	C5121		CCSSCH100D50
	C4281, C4282, C5122		CCSSCH120J50
	C4245, C4275		CCSSCH330J50
	C4246		CCSSCH680J50
	C3303, C3304		CCSSCJ3R0C50
	C3215, C3216, C4534, C4536, C4537		CEVW101M16
	C2101, C3212, C3218		CEVW101M6R3
	C5102		CEVW220M6R3
	C1002, C1062, C1231, C1315, C3314		CEVW221M4
	C4201, C4220, C4268, C4276, C4571		CEVW221M4
	C3318		CEVWNP470M10
	C1004, C1036, C1059, C1104, C1201		CKSQYB106K6R3
	C1220, C1301, C3008, C3214		CKSQYB106K6R3
	C3301, C3302, C3404, C4514, C4515		CKSQYB106K6R3
	C4545		CKSQYB106K6R3
	C1901, C4502, C4508		CKSQYB225K10
	C4525, C4526, C4546		CKSQYB475K6R3
	C3007, C4551		CKSRYF104Z50
	C1003, C1012, C1020, C1023, C1025		CKSSYB102K50
	C1040, C1051, C1207, C1209, C1210		CKSSYB102K50
	C1226, C1228, C1229, C1307, C1311		CKSSYB102K50
	C1313, C4296, C4297, C4519, C4527		CKSSYB102K50
	C1017, C1021, C1034, C1035, C1052		CKSSYB103K16
	C1205, C1206, C1224, C1225, C1305		CKSSYB103K16
	C1308, C3003, C3311, C3315, C3317		CKSSYB103K16
	C4503, C4509		CKSSYB103K16
	C1501, C1502, C1513, C1514, C4243		CKSSYB104K10
	C5105		CKSSYB271K50
	C3204		CKSSYB331K50
	C1005, C1008-C1010, C1015, C1016		CKSSYF104Z16
	C1019, C1022, C1024, C1026		CKSSYF104Z16
	C1028-C1030, C1032, C1033, C1050		CKSSYF104Z16
	C1053, C1055-C1058, C1063, C1064		CKSSYF104Z16
	C1105, C1203, C1211-C1214, C1222		CKSSYF104Z16
	C1230, C1233, C1234, C1239-C1242		CKSSYF104Z16
	C1302, C1304, C1312, C1314		CKSSYF104Z16

Mark No.	Description	Part No.
	C1320, C1321, C1328-C1331	CKSSYF104Z16
	C2501-C2505, C3004-C3006, C3101	CKSSYF104Z16
	C3104-C3106, C3113, C3202, C3203	CKSSYF104Z16
	C3206, C3209, C3217, C3309, C3312	CKSSYF104Z16
	C3401, C4244, C4249, C4251-C4256	CKSSYF104Z16
	C4261-C4263, C4265, C4291, C4501	CKSSYF104Z16
	C4504-C4507, C4516, C4517	CKSSYF104Z16
	C4523, C4524, C4552-C4562	CKSSYF104Z16
	C5110-C5112, C5114, C5118, C5127	CKSSYF104Z16
	C1001, C1006, C1007, C1011, C1013 (1.0 YF)	VCG1057
	C1018, C1027, C1031, C1113, C1115	VCG1057
	C1202, C1204, C1208, C1221, C1223	VCG1057
	C1227, C1303, C1306, C1309, C1902	VCG1057
	C3001, C3102, C3103, C3219	VCG1057
	C3305, C3306, C3316, C3737, C3738	VCG1057
	C3801, C3802, C4202-C4219	VCG1057
	C4221-C4229, C4232, C4239, C4240	VCG1057
	C4248, C4250, C4257-C4260, C4264	VCG1057
	C4266, C4267, C4269-C4274	VCG1057
	C4283, C4284, C4518, C4520	VCG1057
	C4572-C4574, C5101, C5103, C5113	VCG1057
	C5119, C5120, C5123-C5126	VCG1057
	C3310, C4278, C4285, C4288, C4290	VCG1058
	C4533 (1.0 YB)	VCG1058
	C4532 (22/6.3)	VCG1061
	C1215 (150/4)	VCH1246
	C4548, C4575, C4576 (47/4)	VCH1253

RESISTORS

	R5133, R5134	RAB4CQ0R0J
	R1042-R1047, R1051, R1054	RAB4CQ103J
	R4241, R4242	RAB4CQ103J
	R3853-R3857, R4252, R4253, R4352	RAB4CQ220J
	R4354, R4356, R4358, R4360	RAB4CQ220J
	R3801-R3806, R3828-R3833	RAB4CQ223J
	R1241-R1244, R1251-R1254	RAB4CQ330J
	R1325-R1328, R3810-R3813, R3824	RAB4CQ330J
	R3837-R3840, R3851	RAB4CQ330J
	R1401-R1411, R1451-R1454	RAB4CQ560J
	R1455-R1458	RAB4CQ820J
	R3208, R3223	RN1/16SC56R0D
	R3314, R3315, R4536, R4537	RN1/16SE1003D
	R3207, R3226	RN1/16SE1502D
	R5103	RN1/16SE5101D
	R3209, R3224	RN1/16SE8201D
	R5108	RN1/16SE9101D
	R3003, R3101, R3201, R3205, R3206	RS1/10S0R0J
	R3402, R4224, R4230, R4232	RS1/10S0R0J
	R4513, R4514, R4522	RS1/10S0R0J
	R3110, R4532	RS1/16S1001F
	R4202, R4206, R4531	RS1/16S1101F
	R2502, R2505, R2508, R2511, R2514	RS1/16S1800F
	R4201, R4204	RS1/16S2201F
	R4203, R4210	RS1/16S2701F
	R1501, R1503	RS1/16S3901F
	R4534	RS1/16S5600F
	R5104-R5107	RS1/16S56R0D
	Other Resistors	RS1/16S###J

Mark No.	Description	Part No.
OTHERS		
	CN4502 CONNECTOR	AKM1290
	CN1901 7P CONNECTOR	VKN1411
	CN3801, CN3802 FFC CONNECT0R	VKN1794
	CN3808 30P CONNECTOR	VKN1892
	CN5601 CONNECTOR	VKN2010
	CN2201, CN3001 CONNECTOR	VKN2011
	CN4501 CONNECTOR	VKN2012
	X3401 CERAMIC (16MHz)	CSS1616
	X3301 CRYSTAL (27.000MHz)	VSS1204
	X4281 CRYSTAL (27.000MHz)	VSS1205
	X5101 CRYSTAL (24.576MHz)	VSS1206

I SCRB ASSY

SEMICONDUCTORS

	IC701	BA4558F-HT
	IC801	LA73026AV
	IC703	LA73054
	IC802-IC804	MM1506XN
	IC805	MM1637XVBE
	IC702, IC806	SN74AHC2G53HDCT
	Q708, Q710, Q712-Q714, Q806	2SA1576A
	Q808-Q812, Q814, Q815	2SC4081
	Q702, Q704	2SC4097
	Q703, Q803, Q805	DTA124EUA
	Q705, Q813, Q816	DTC124EUA
	Q801, Q802	HN1C03FU
	Q701, Q807	RN4903
	D701, D801, D829	1SS355
	D830, D831	DAN217U
	D802-D815, D822-D826, D828	DF3A5.6FU
	D816	RB501V-40
	D702	UDZS12(B)

COILS AND FILTERS

	L701, L703, L705	LCYA100J2520
	L702, L704, L706	LCYA180J2520

CAPACITORS

	C742, C748, C755	CCSRCH100D50
	C846-C849	CCSRCH102J50
	C741, C751, C758	CCSRCH180J50
	C817, C818	CCSRCH220J50
	C871, C873	CCSRCH221J50
	C745, C753, C760	CCSRCH270J50
	C836-C845	CCSRCH471J50
	C744, C752, C759	CCSRCH680J50
	C743, C749, C756	CCSRCH8R0D50
	C868-C870	CEAT102M6R3
	C807, C808, C810, C811	CEVW100M16
	C709, C717, C721, C731, C734	CEVW101M10
	C805, C855	CEVW101M10
	C726, C727, C802, C833, C834	CEVW101M16
	C856-C858	CKSQYB225K10
	C801	CKSQYF105Z16
	C814, C815, C823-C826	CKSQYF106Z10
	C832	CKSRYB103K50
	C712-C716, C809, C813, C816	CKSRYB104K25
	C829, C852	CKSRYB104K25
	C703, C707, C710, C711	CKSRYF104Z25

Mark	No.	Description	Part No.
	C718-C720, C722, C724, C725		CKSRYF104Z25
	C730, C733, C736, C739, C747		CKSRYF104Z25
	C754, C761, C762, C835, C851		CKSRYF104Z25
	C859, C862, C867, C872, C874		CKSRYF104Z25
	C804, C806, C854		CKSRYF105Z10
	C812		CKSYB105K16
	C819, C820, C827, C828		CKSYB106K10
	C860, C861, C863-C866		CKSYB106K10
	C723, C728		CKSYB475K16

RESISTORS

R836, R842		RS1/10S75R0F
R758-R760		RS1/16S1202F
R715-R726, R737, R738		RS1/16S5600F
R745, R746, R753, R754		RS1/16S5600F
R826, R829-R832, R853-R857		RS1/16S75R0F
R755, R756		RS1/16S8201F
Other Resistors		RS1/16S###J

OTHERS

JA801, JA802	CONNECTOR	VKB1157
CN701, CN702	27P CONNECTOR	VKN1431
KN801	SCREW PLATE	VNE1948

J POWER SUPPLY UNIT

OTHERS

⚠IC202	PROTECTOR (400mA)	AEK7054
⚠IC301	PROTECTOR (630mA)	AEK7061
⚠IC401, IC402	PROTECTOR (1.6A)	AEK7066

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

◆ Jigs and Tools to be used

Remote control unit for serving (GGF1381)
DVD Recorder Data Disc (GGV1239) (When repairing until June 2005, use the Disc GGV1179.).
Download disc
Test disc (GGV1025)
DVD-RW (Commercial goods)

◆ Service Mode List

1. Setting type

Item	When to perform
7.1.1 Model setting	• When rplacing MAIN ASSY or JACB ASSY.
7.1.2 CPRM ID number and data	• When "CPRM ERROR" is displayed on the display screen. • After the MAIN ASSY, DRIVE ASSY or HDD replaced.
7.1.3 Firmware downloading method	• After model setting (After replacing MAIN ASSY, DRIVE ASSY, JACB ASSY). • After the HDD is replaced. • When NG is displayed for the version infomation in Service mode.
7.1.4 Video Adjustment for Specific Area	• When a flicker appears on the tuner display like a horizontal or vertial out-of-sync symptom
7.1.5 (4) OSD Filter Setting	• When a character flicker appears on the OSD depending on the monitor.

2. Diagnosis type

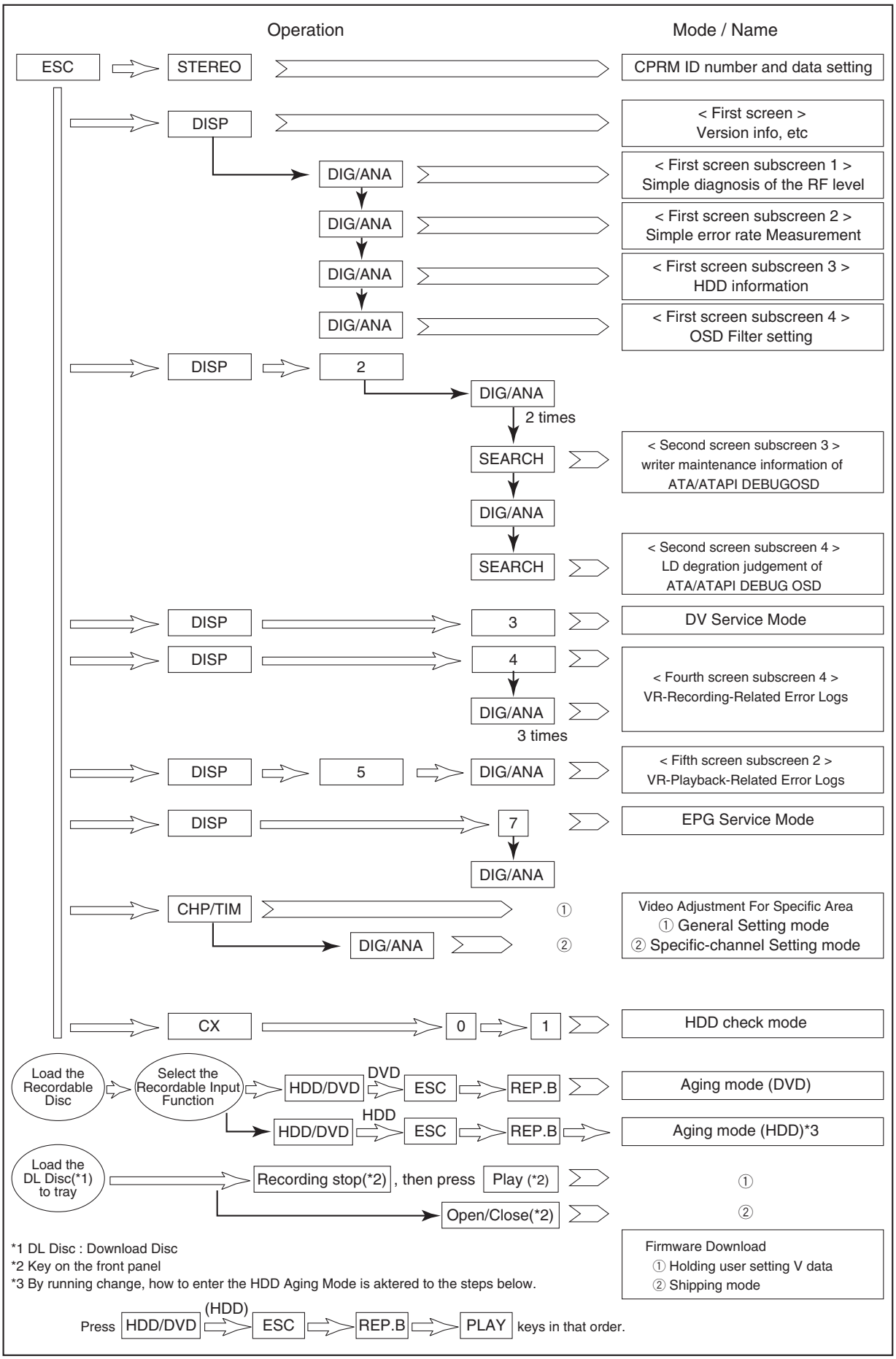
7.1.5 Service Mode First screen : Version, Simple diagnosis of the RF level, Simple error rate measurement, HDD information. Second screen : ATA/ATAPI debug screen, LD degration judgement Fourth screen : VR-recording-related error loss Fifth screen : VR-playback-related error loss	• When confirming version infomation • When confirming the state of DRIVE Assy.
7.1.6 DV Service Mode	When any failures occurs while a DV device connected
7.1.7 EPG Service Mode	When EPG data cannnot be or can be only partially obtained.
7.1.8 Aging Mode	When a claimed sympton is difficult to reproduce.
7.1.9 HDD Check Mode	When checking the quality of HDD.

◆ Necessary procedure List when replacing Assys

Following is the surely necessary procedures and the produet state after changing when replacing next ASSYs.

Replaced ASSY	Necessary setting	State after replacing	
		User setting	HDD contents
MAIN ASSY JACB ASSY	1. Model setting 2. CPRM setting 3. Firmwave download	×	○
DRIVE ASSY	1. CPRM setting 2. Firmwave download	○	○
HDD	1. CPRM setting 2. Firmwave download	○	×

◆SERVICE MODE MAP



7.1.1 MODEL TYPE SETTING

[Purposes]

When the MAIN Assy and/or TUJB Assy that are(is) commonly used with another model are(is) replaced, they(it) must recognize the model of this unit.

Items to be set: The model number, destination, and region No. must be set.

[Tool to be used]

Remote control unit for servicing
(GGF1381)

[Notes]

- Once the setting has been made, it can never be changed. Be sure to make the setting correctly.
- As this setting resets the Assy(s) in question to the factory-preset status, it is recommended that you obtain the customer's consent beforehand.

[Procedures]

① After power on, the following screen is displayed on TV monitor. Press four digits properly (for example " 2201 ") by using the remote control unit for service, according to the screen information.

[Recorder's Model Setting]
Input the number using the remote for Service.

> - - -

Input No.	Model	**	Destination
[22** :	DVR-530H]	[01 :	/WY]
[23** :	DVR-630H]	[02 :	/WV]
[24** :	DVR-433H]	[03 :	/WY/RE]
		[04 :	/WY/GR]
		[05 :	/WY/SP]

②Disconnect then reconnect the AC power cord of the unit. Be careful not to impart vibration to the unit immediately after the AC power cord is disconnected.

③ Reset the recorder to all its factory settings.
(Make sure that the recorder is on. Press and hold ■ (STOP) key and press ⏻ (STANDBY/ON) key on the front panel.)
The recorder turns off with all settings reset.

④ Press [ESC] then [DISP] keys by using the remote control unit for servicing, and then confirm each Model Name (for example " DVR-530H/WY ").

DVR-530H/WY		VERSION : 3.**	
SYSCON	:	RELEASE_166	
		Rev :1.10357.2.43	
TUNERCON	:	835.000	OK
DRIVE	:	DVD-RW DVR-R09R	OK
		1.52	OK
		DLDL000946WL	OK
HDD	:	WDC WD1600BB-xxGUCx	160
DEVICE	:	PRISM2-ES2	
REGION	:	2	
C	:	*********	
FLASH	:	64M	
IRCON (*)	:	1.01	OK
TFD (*)	:	EPG EU LIB	OK

(*) : Except DVR-433H model

⑤ End

7.1.2 CPRM ID NUMBER AND DATA SETTING

[Purposes]

For the DVD recorder,it is necessary with the recoding/playback of DVD–RW disc to set an individual number (ID number) and ID data to each recorder. If the number and data are not set correctly with the following procedure, cannot work with residual quantity 0:00 or operations in the future may not be guaranteed with RW disc. You will find the ID number to be set on the ID label on the rear panel.

The Input is Necessary When:

- " CPRM ERR" is displayed on the FL display immediately after the power is turned on or in Stop mode.
- When the MAIN ASSY , DRIVE ASSY or the HDD is exchanged.

[Tools to be used]

Remote control unit supplied with the unit (VXX2969)

Remote control unit for servicing (GGF1381)

DVD Recorder Data Disc (GGV1239)(*1)

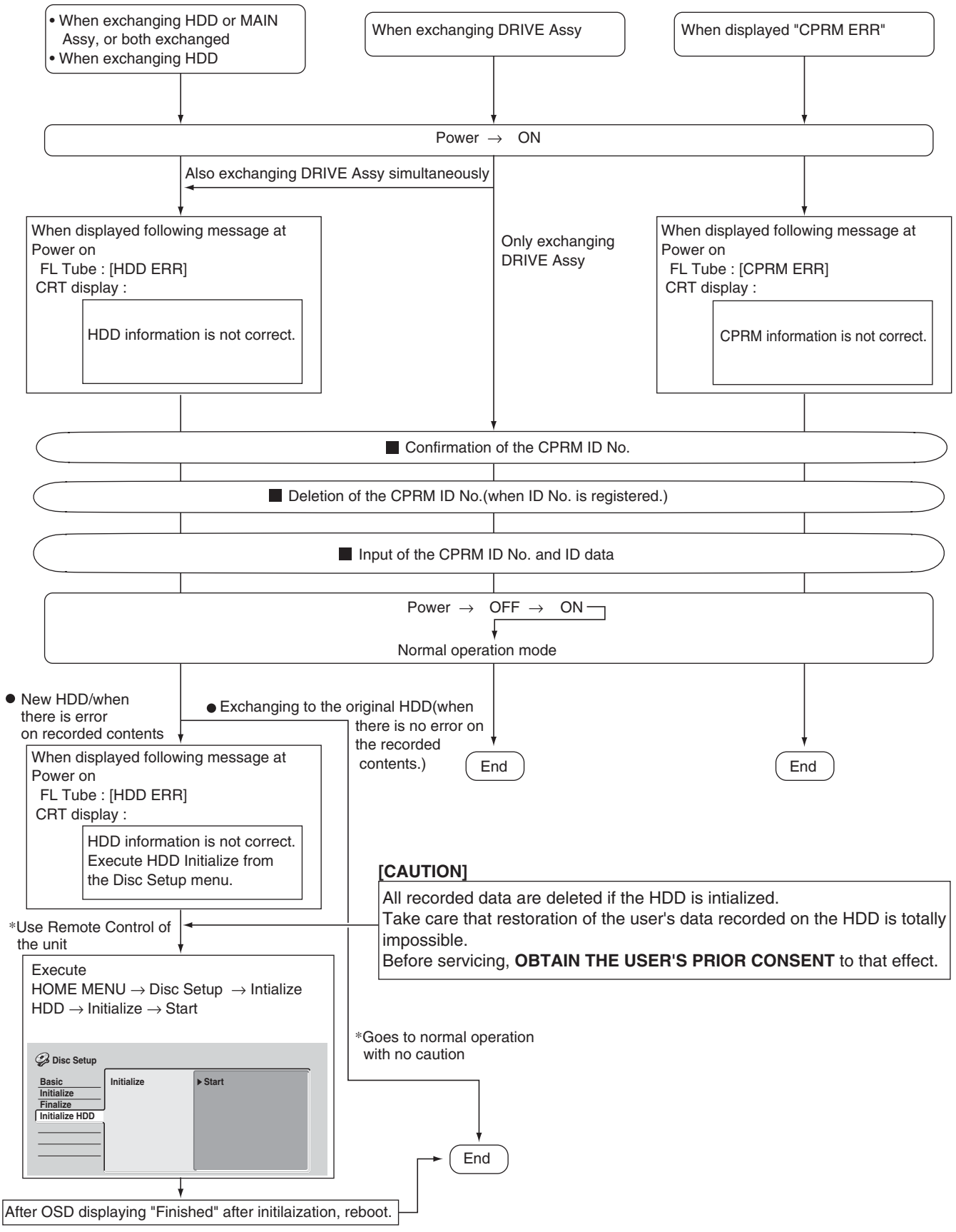
[Notes]

Important: If no ID label is found on the rear panel, write down the specified ID number by checking it according to "How to confirm the ID number" shown below.

- Input the ID number while the unit is in Stop mode.
- After the data are read from the ID data disc (GGV1239), the disc will automatically be unloaded.

(*1) DDV1239 will be released on July 2005.
Until new disk(GGV1239) will be released, use GGV1179.

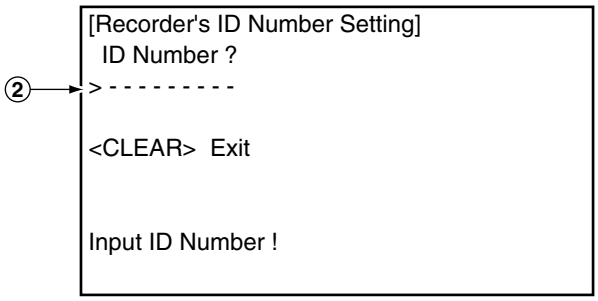
■ Input Flow of the ID No. and ID data when exchanging HDD, MAIN Assy or Drive Assy


• When exchanging HDD or MAIN Assy, or both exchanged
• When exchanging HDD
When exchanging DRIVE Assy
When displayed "CPRM ERR"
Power → ON
Also exchanging DRIVE Assy simultaneously
When displayed following message at Power on
FL Tube : [HDD ERR]
CRT display :
HDD information is not correct.
Only exchanging DRIVE Assy
When displayed following message at Power on
FL Tube : [CPRM ERR]
CRT display :
CPRM information is not correct.
■ Confirmation of the CPRM ID No.
■ Deletion of the CPRM ID No.(when ID No. is registered.)
■ Input of the CPRM ID No. and ID data
Power → OFF → ON
Normal operation mode
● New HDD/when there is error on recorded contents
● Exchanging to the original HDD(when there is no error on the recorded contents.)
End
End
When displayed following message at Power on
FL Tube : [HDD ERR]
CRT display :
HDD information is not correct.
Execute HDD Initialize from the Disc Setup menu.
[CAUTION]
All recorded data are deleted if the HDD is intialized.
Take care that restoration of the user's data recorded on the HDD is totally impossible.
Before servicing, OBTAIN THE USER'S PRIOR CONSENT to that effect.
*Use Remote Control of the unit
Execute
HOME MENU → Disc Setup → Intialize
HDD → Initialize → Start
*Goes to normal operation with no caution
Disc Setup
Basic
Initialize
Finalize
Initialize HDD
Initialize
Start
End
After OSD displaying "Finished" after initilaization, reboot.

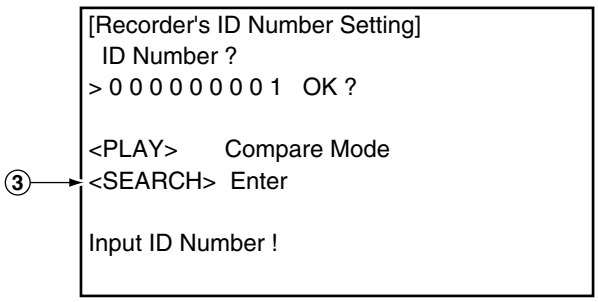
How to Input the ID Number and ID Data

① To enter the input mode, press ESC + STEREO keys sequentially in a status with no ID number set, such as after FLASH-ROM downloading.

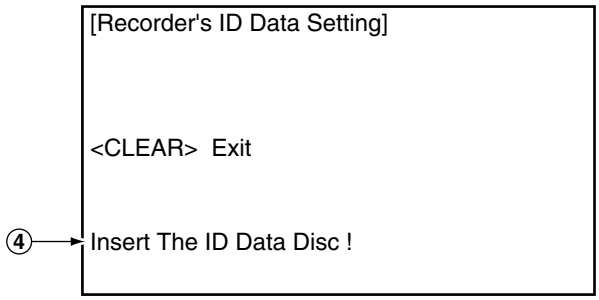
② As number input is enabled when the unit enters the input mode, input the 9-digit ID number.
(The entered number is also displayed on the FL display.)



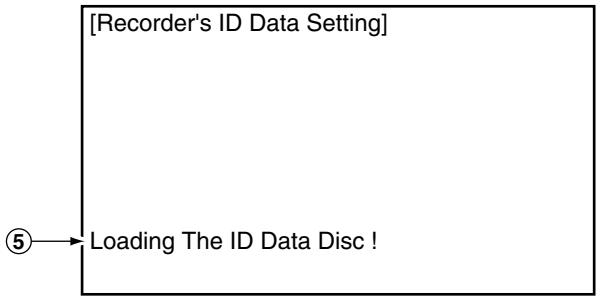
③ After inputting the number, press SEARCH keys to register the ID number.



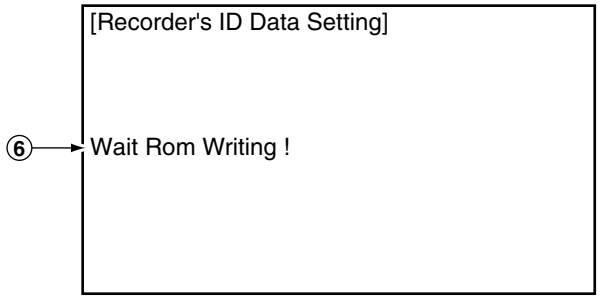
④ When the ID number has been registered, the unit enters the ID data input mode. (The FL display indicates "INSERT ID.")
In this condition, place the ID data disc on the tray and close the tray using the CLOSE key "■/⏏" on the player.



⑤ While the data are being read, the message shown in the figure at left is displayed on the screen.
(The FL display indicates "LOAD ID.")

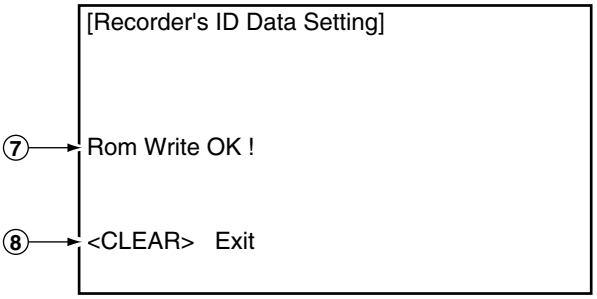


⑥ When the ID data have been read, the data are written to the FLASH-ROM.
(The FL display indicates "WRITE ID.")



⑦ When the ID data have been written to the FLASH-ROM, the message "Rom Write OK" is displayed on the screen.
(The FL display indicates "ID OK.")

⑧ After confirming this message, press CLEAR key to exit the input mode.

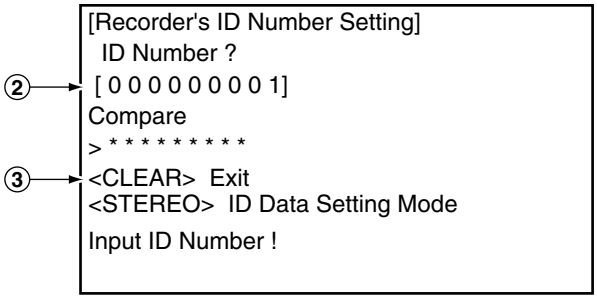


[How to Confirm the ID Number]

① Press ESC + STEREO keys sequentially with an ID number already set, and the unit enters the ID number confirmation mode.

② The set ID number is displayed on the screen (and on the FL display), permitting you to confirm it.

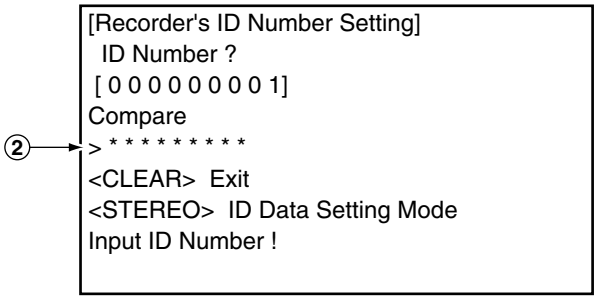
③ To exit this mode, press CLEAR key.



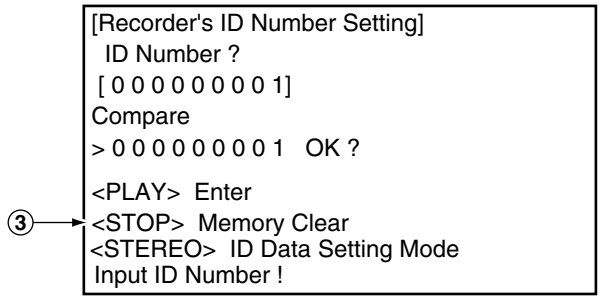
[How to Clear the ID Number]

① Press ESC + STEREO keys sequentially with an ID number already set, and the unit enters the ID number confirmation mode.

② Input the same number as the ID number you have set.



③ After inputting the number, press STOP key.
Only when the entered number matches the set ID number, the ID number is cleared and the unit exits this mode.
If the numbers do not match, you must return to step ②.
(STOP key is not accepted until 9 digits are entered.)



7.1.3 FIRMWARE DOWNLOADING METHOD

[Purposes]

1. When the main board is replaced, the firmware versions for the system control computer, drive, IR microcomputer and the TUFL microcomputer do not match, and operations of the unit may be destabilized.
   To match the versions for the above four, firmware downloading is necessary in the following two cases:
   ① After the model setting
   ② When NG is displayed on the first screen (version information, etc.) of Service mode
   ③ After changing MAIN Assy, JACB Assy or Drive Assy
   ④ After changing HDD (downloading the EPG Library (program code) to HDD)

[Notes]
When downloading is disabled, at ON time, usually "HDD data is not correct" is displayed on screen and "HDD ERR" on the FL . The EPG program is not booted up.

2. Rewriting the firmware to the latest version may ameliorate the symptoms claimed by the customer.

There are the following two methods for downloading: disc download and serial download

1. DISC DOWNLOAD

[Tools to be used]

Remote control unit for servicing (GGF1381)

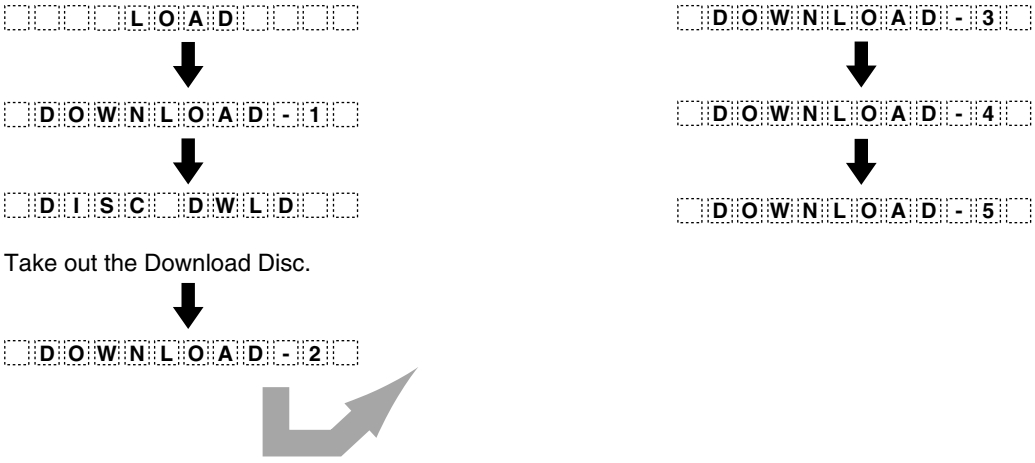
Download DISC

[Notes]

Be sure NOT to turn off the unit during downloading.
If the unit is turned off during downloading, the SYSCON, TUNERCON and DRIVE programs may not be properly rewritten, in which case the unit may not be able to initialize itself normally when turned on again.

[Procedure] ① Open a disc tray by pressing the "OPEN/CLOSE" button.
② Put the download disc on the tray. Press a " Record Stop " button while pressing a "PLAY" button on the frontpanel.
* The disc tray closes automatically and the disc is loaded.
* The disc tray opens automatically after loading.

FL display



③ Take out the Download Disc.

* After download is completed, the power turns off, and turns on and a disc tray closes automatically.
* It takes for about 7-8 minutes until download is completed.

④ Press and hold a " ESC " button, then press " DISP " button on the remote control unit for servicing.
⑤ Confirm a firmware release version.
⑥ Press " ESC " button on the remote control unit for servicing in order to exit the test mode.

[Tips]

(1) If the power is not correctly turned on or when the power is shut off during downloading, proceed as follows before performing download again:

- In a case where downloading was incorrectly terminated while "DOWNLOAD-1" was displayed on the FL display:
  The EPG Library (program code) will not be downloaded to HDD correctly. (*)
  Download from the disc again.
  When it is unable to download, or not operating correctly, replace the HDD.

- In a case where downloading was incorrectly terminated while "DOWNLOAD-2" was displayed on the FL display:
  The SYSCON program will not function correctly.
  If the program cannot be downloaded from the disc or through serial communication, replace the FLASH ROM (IC1102 : MAIN ASSY).

- In a case where downloading was incorrectly terminated while "DOWNLOAD-3" was displayed on the FL display:
  The DRIVE program will not function correctly.
  If the program cannot be downloaded from the disc or through serial communication, replace the DRIVE Assy.

- In a case where downloading was incorrectly terminated while "DOWNLOAD-4" was displayed on the FL display
  The program for the tuner microcomputer will not function correctly.
  If the program cannot be downloaded from the disc or through serial communication, replace the TUNERCON microcomputer (IC101 : JACB ASSY).

- In a case where downloading was incorrectly terminated while "DOWNLOAD-5" was displayed on the FL display
  The program for the IR microcomputer will not function correctly. (*)
  If the program cannot be downloaded from the disc or through serial communication, replace the IRCON microcomputer (IC3401 : MAIN ASSY).

(2) The setting way to shipping mode (Reference)
At ② lines of the [Procedures], press "OPEN/CLOSE" button while pressing REC STOP button.

(*) : Except DVR-433H model

2. SERIAL DOWNLOAD

[Purposes]

1. When the main board is replaced, the firmware versions for the system control computer, drive, and the TUFL microcomputer do not match, and operations of the unit may be destabilized. In such a case, the versions for the above three must be matched.
2. This method is used when disc downloading fails.

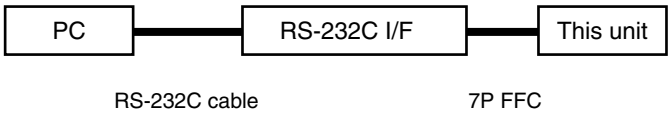
• In the serial download, the stored code are not downloaded to HDD. After serial downloading, be sure to do disc download.

[Tools to be used]

* PC with serial port
* RS-232C straight cable
* RS-232C I/F jig (GGF1348)
* 7P FFC (VDA1681)
* Download program (UFU.exe)
* Firmware

[Connection]

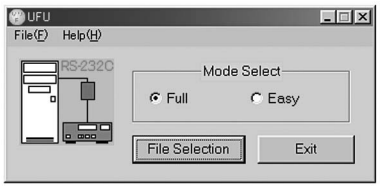
Connect as follows:



[Procedures]

① Connect the 232C I/F jigs above way.

② Turn on the PC and start the " UFU.exe ".

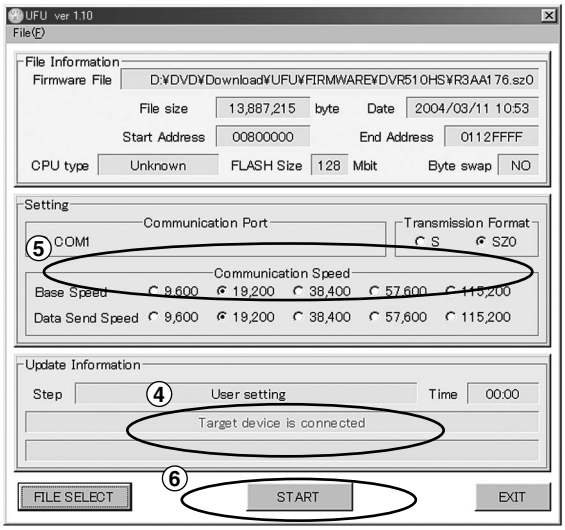


③ Select the Firmware file. ("sz0" file)

④ Turn the DVD recorder on and start the download program.
" Target Device is connected " is appeared on the screen.

⑤ Select the Communication Speed (Baud Rate)
a) Base Speed 38,400
b) Data Send Speed 115,200

⑥ START
- Even if you click "START" button, sometimes "Communication Error" may come out one to twice, and download may fail.
  In this case, please click "START" again.
- Other factors can be considerd if download fails 3 times or more.
- And it takes about an hour for updating the firmware.



7.1.4 VIDEO ADJUSTMENT FOR SPECIFIC AREA

[Purposes]

Depending on the area, if a flicker may appear in a picture received by the tuner, it can be corrected or reduced with this setting.

[Tools to be used]

Remote control unit supplied with the unit (VXX2969)

Remote control unit for servicing (GGF1381)

1. Specific-Channel Setting mode

In this mode, specific settings can be made for up to 12 channels.
For channels that do not have specific settings, the settings of General Setting mode are applied.

[How to enter this mode]

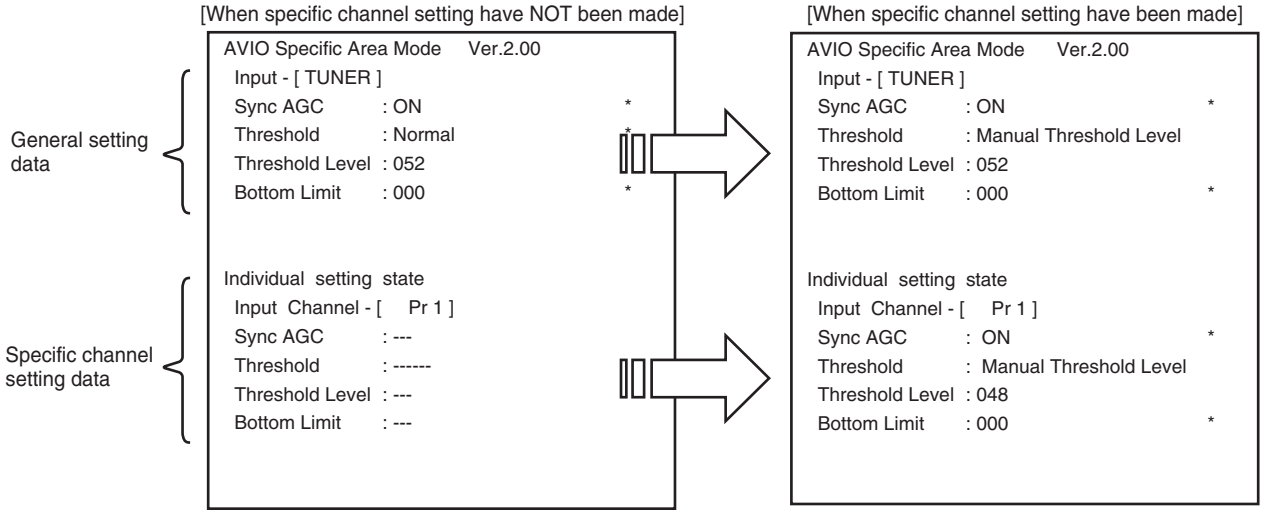
① Select a channel or line input (L1-L3) on which a specific setting is to be made.
② Press the ESC then CHP/TIM keys on the remote control unit for servicing. "General Setting mode" is displayed.
③ Press the DIG/ANA key in General Setting mode. Specific-Channel Setting mode is entered.

[How to exit] Press the ESC key on the remote control unit for servicing to return the Normal mode.

[Note] Setting is in effect only during recording/playback stop.

[Setting examples]

The setting examples in Specific-Channel Setting mode are shown below.
For details on each setting item, see "Table 1: Key operations in Specific-Area Setting mode."


[When specific channel setting have NOT been made]
AVIO Specific Area Mode Ver.2.00
Input - [TUNER]
Sync AGC : ON *
Threshold : Normal *
Threshold Level : 052
Bottom Limit : 000 *
General setting data
Individual setting state
Input Channel - [Pr 1]
Sync AGC : ---
Threshold : ------
Threshold Level : ---
Bottom Limit : ---
Specific channel setting data
[When specific channel setting have been made]
AVIO Specific Area Mode Ver.2.00
Input - [TUNER]
Sync AGC : ON *
Threshold : Manual Threshold Level
Threshold Level : 052
Bottom Limit : 000 *
Individual setting state
Input Channel - [Pr 1]
Sync AGC : ON *
Threshold : Manual Threshold Level
Threshold Level : 048
Bottom Limit : 000 *

[Tips]

- If a channel that does not have specific settings is displayed, the setting figures are displayed as hyphens (- -).
- If the setting figures are not displayed as hyphens, those settings have been specifically set even if they are identical to the default settings or those of General Setting mode.
- The setting indicated with an asterisk (*) is the default.
- The channels to be indicated for "Input Channel" are as shown below:
  Line inputs: L1-L3, DV (DV is not valid for specific-area settings.)
  Tuner channels: Channels received by the tuner (channels to be set in Specific-Channel Setting mode, etc.)

[Tips]

- Indication when the maximum number (12) of channels have individual settings
  If a channel that does not have specific settings is currently selected, the indication will be as shown below, and individual data items cannot be set for that channel. To set individual data items for the currently selected channel, you must clear any specific-channel settings for one or more channels.

```
AVIO Specific Area Mode     Ver.200
 Input - [ TUNER ]
 Sync AGC         : ON                    *
 Threshold        : Manual Threshold Level
 Threshold Level  : 052
 Bottom Limit     : 000                   *


Individual  setting  state

 Sorry !
 You can store only 12 channels
 for Specific Area mode.
```

2. General Setting mode

[How to enter this mode]

- To shift from Specific-Channel Setting mode:
  Each time the DIG/ANA key is pressed, Specific-Channel Setting mode and General Setting mode are alternately selected.

- To shift from Normal mode (recording/playback stop):
  Press the ESC then CHP/TIM keys.

[How to exit] Press the ESC key to return the normal mode.

[Setting examples]

Show setting example on the General Setting mode screen to the following.
Regarding setting of actual each item, refer to table 1 (key operations in specific-area setting mode).

[General Setting mode screen]

```
AVIO Specific Area Mode   Ver 2.00
 Input - [ TUNER ]
 Sync AGC         : ON                    *
 Threshold        : Normal                *
 Threshold Level  :
 Bottom Limit     : 000                   *
```

*: Setting is the default.

[Display in General Setting mode when the channel currently displayed has specific settings]

```
AVIO Specific Area Mode   Ver 2.00
 Input - [ TUNER ]
 Sync AGC         : ON                    *
 Threshold        : Normal                *
 Threshold Level  :
 Bottom Limit     : 000                   *

 This channel is set up
  individually.
```

[Tips]

- General Setting mode can be entered only during recording/playback stop.
- The currently selected input mode (TUNER or LINE) is displayed for "Input."
- If L1, L2, L3, or DV is selected for input, general settings for the line input can be made (DV is not valid for specific-area settings), and if TUNER is selected, general settings for the tuner input can be made.

Table 1: key operations in specific-Area setting mode (1/2)
Key operations in Specific Area Setting mode of the remote control units are shown in the table below
(the keys are of the remote control unit for servicing unless otherwise stated):

Key	Operation	Switching (*: Default)	Remarks	Used in Specific-Channel Setting mode	Used in General Setting mode
[DIG/ANA]	Switches General setting mode and Specific setting mode.	–	–	○	○
[INPUT SELECT], [CHANNEL +/-] (Remote control unit supplied with this unit)	Switches inputs or channels.	–	–	○	○
[SIDE A], [SIDE B]	Sets SyncAGC.	ON(*) / OFF	ON : The sync level is set to an appropriate value. OFF : Cancel the Sync AGC.	○	○
[Rev ×3], [×3 Fwd]	Sets Threshold.	(*)Normal Bottom + Alfa Manual Threshold Level V Manual Threshold Level		○	○
[Rev CHAPTER SKIP] [CHAPTER SKIP Fwd]	Sets Threshold Level.	According to the selected Threshold type, the value can be changed in the range shown below:	–	○	○
		• Bottom + Alfa 0 - 255 (Default : 87)		○	○
		• Manual Threshold Level 0 - 255 (Default : 173)		○	○
		• V Manual Threshold Level 0 - 255 (Default : 173)		○	○

Table 1: key operations in specific-Area setting mode (2/2)

Key	Operation	Switching (*: Default)	Remarks	Used in Specific-Channel Setting mode	Used in General Setting mode
[<<|| STILL STEP], [STILL STEP ||>>]	Sets Bottom Limit.	0 - 255 (Default: 0)	–	○	○
[PLAY]	All channels that have specific setting data will be canceled, and the specific data will be initialized.	–	The General Setting data will not be changed.	○	×
[CLEAR]	Specific-Channel Setting mode: If the currently selected channel has its specific setting, that setting will be canceled. (By canceling the specific setting for that channel, the number of remaining channels that can have specific settings will be increased by one.) General Setting mode: Settings of General Setting mode are initialized.	–	Specific-Channel Setting mode: All specific data are initialized. The General Setting data will not be changed. General Setting mode: All general setting data are reset to default. The specific setting data will not be changed (will be retained).	○	○
[PAUSE]	The specific-channel-setting data for the currently selected channel are reset to default.	–	The General Setting data will not be changed (will be retained).	○	×
[ESC]	To quit VDEC Setting mode for a specific area and clear the on-screen display.	–	–	○	○

Notes:
- Each key listed in Table 1 above is active only while the tuner is completely stopped.
- The setting values will not be reset to default even if resetting to the state at the time of shipment is performed.

7.1.5 SERVICE MODE

Overview and purposes

To be used to check the status of the product and to collect the information for failure diagnosis.
The following information to be used for servicing is displayed:
[1] First screen : Version, HDD information, etc.
[2] Second screen : ATA/ATAPI debug screen (Writer information)
[4] Fourth screen : VR-recording-related error logs
[5] Fifth screen : VR-playback-related error logs

Each screen has sublevel screens.

[Note] After entering any Service mode screen, to shift to another Service mode screen, first quit that Service mode screen then enter another Service mode screen.

1. Version information, etc. (First screen)

[Purposes]

To check the versions of the system control computer, TUNER microcomputer, and firmware for the drive, simple measurement of the RF level for the U/V tuner, results of the simple error rate measuremen, HDD information, and OSD Filter setting

[Tools to be used]

Remote control unit for servicing (GGF1381)

Aluminum-coated test disc (GGV1025)

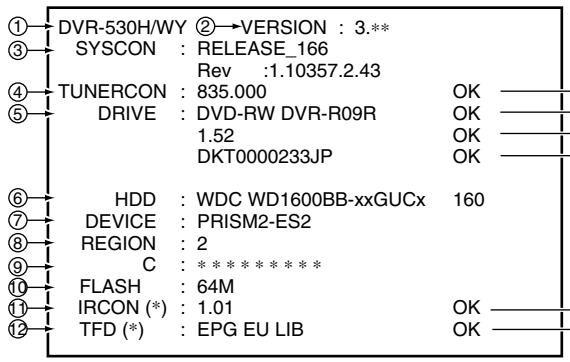
[How to enter] While the GUI screen is not displayed, press the ESC then DISP keys.

How to enter and change subscreens of the first screen: While the first screen is displayed, press the DIG/ANA key repeatedly until your desired subscreen is displayed. The subscreens change

[How to quit] Press the ESC key.

[Description]

(1) First screen


① DVR-530H/WY ②→VERSION : 3.**
③ SYSCON : RELEASE_166
Rev :1.10357.2.43
④ TUNERCON : 835.000 OK
⑤ DRIVE : DVD-RW DVR-R09R OK
1.52 OK
DKT0000233JP OK
⑥ HDD : WDC WD1600BB-xxGUCx 160
⑦ DEVICE : PRISM2-ES2
⑧ REGION : 2
⑨ C : * * * * * * * * *
⑩ FLASH : 64M
⑪ IRCON (*) : 1.01 OK
⑫ TFD (*) : EPG EU LIB OK

OK : Appropriate version compared with that of the firmware of the system control computer
OK+ : The version of the TUNER microcomputer is advanced.
Measures to be taken: Download the firmware.
NG : The type of the TUNER microcomputer is not appropriate.
Measures to be taken:
• Download the firmware.
NG- : The version of the TUNER microcomputer is older.
Measures to be taken:
• Download the firmware.

OK : The appropriate drive is mounted.
NG : An inappropriate drive is mounted.
Measures to be taken: Replace with an appropriate DRIVE Assy.

OK : Appropriate version compared with that of the firmware of the system control computer
OK+ : The version of the drive microcomputer is advanced.
Measures to be taken: Download the firmware.
NG- : The version of the drive microcomputer is older.
Measures to be taken: Download the firmware.

OK : The serial No. for the drive has been registered.
NG : The serial No. for the drive has not been registered.
Measures to be taken: Replace with an appropriate DRIVE Assy.

OK : Appropriate version of theIRCON
NG+ : The version of the drive IR blaster computer is advanced.
Measures to be taken: Download the firmware.
NG- : The version of the IR blaster microcomputer is older.
Measures to be taken: Download the firmware.

OK : Normal readout is finished.
Not Found : Disable to read
Measures to be taken: ① CPRM Input
② Download the firmware.

① Model name/destination
② Version of the recorder software
③ Revision No. of the system-control computer software
④ Version No. of the tuner microcomputer
Result of the combination ckeck with system u-com
⑤ Information on the built-in drive
(Model name, version No., model type, serial No.)
⑥ Data of the built-in HDD, capacity of the HDD
⑦ Version No. of PRISM
⑧ Region No.
⑨ CPRM information (CPRM key No.)
⑩ FLASH ROM information
⑪ EPG dictionary information, Version
⑫ HDD stored code information
HDD stored data (EPG Library)
Category of stored data
EU EPG model : EPG EU LIB

(*) : Except DVR-433H model

• Details on HDD data are described below:

HDD : WDC10234564 # 160

- Capacity of the HDD (unit: Gbytes)
- HDD identification error indication
- Name of manufacturer, part No. by manufacturer

If any abnormality exists in HDD connection, the indications shown in Table 1 below are displayed.

Table 1: HDD recognition status represented by the HDD data display

HDD identification conditions	Example of HDD data to be displayed	Remarks
Failure in physical identification of HDD (no connection, defective HDD, interface error)	Blank space	• Check the connection to the ATA connector. • Replace the ATA flexible cable and connector. • Replace the HDD. • Replace the resistor in the ATA communication line.
Physical identification of HDD possible, but not identified (CPRM ID is not input.)	WDC 10234564 # 160	• Input the CPRM ID.
Physical identification of HDD possible, HDD identified, but failure in logical formatting	WDC 10234564 ! 160	"!" represents an HDD-recognition error. • Initialize the HDD (see page 82), or erase all titles.
Physical identification of HDD possible, HDD identified, and correct logical formatting (HDD correctly identified)	WDC 10234564 160	

If an error indication in the HDD data does not disappear even after the above measures were taken, refer to another sheet of "HDD Service Mode."

(2) Simple diagnosis of the RF level (Subscreen 1)

[Purposes] To check the RF signal of the U/V tuner by checking the input frequency difference and AGC voltage in this debug mode

[How to enter] While the User Setting display is displayed, press the ESC, DISP, then DIG/ANA keys, in that order.

[How to quit] Press the ESC key.

[Description]

```
DVR-530H/WY      VERSION : 3.**
  SYSCON  : RELEASE_***
            Rev    :1.******
TUNERCON  : 835.000                 OK
   DRIVE  : DVD-RW DVR-R09R         OK
            1.52                    OK
            DKT0000233JP            OK

     HDD  : WDC WD1600BB-xxGUCx     160
  DEVICE  : PRISM2-ES2
  REGION  : 2
       C  : * * * * * * * * *

Input CH  : ** ch
Freq Diff : Low 1
AGC Volt  : **** mV
```

- Input channel
- Input frequency difference
- AGC voltage

Subscreen 1

1) AFT voltage (Freg Diff)

How much tuning is off is monitored, as shown below:

Input Frequency	Display
Faraway	High 7
High (within 200kHz)	High 1~5
Just Tune	Center
Low (within 200kHz)	Low 1~5
Low (over 200kHz)	Low 7

2) AGC voltage (AGC Volt)

The gain controlled by the tuner is monitored to infer the input electric field intensity.
(The accuracy of inference differs depending on the product.)

	Field Intensity	AGC VOL
Intense field area (Clear image)	70 dBμ or more	3100 mV or less
Less intense field area (Noise may be generated.)	50 dBμ or more 70 dBμ or less	3100 - 4400mV
Weak field area (Much noise. EPG/VPS/PDC sometimes cannot be obtained.)	30 dBμ or more 50 dBμ or less	4400 mV or more (It is unable to discriminate under the weak field area.)
Very weak field area (Image damaged. EPG/VPS/PDC cannot be obtained.)	30 dBμ or less	4400 mV or more (It is unable to discriminate.)

Tips:

For good reception, the field intensity must be 50 dBμ or more (AGC Volt 4400 mV or less).
For accurate measurement, use a field intensity meter.

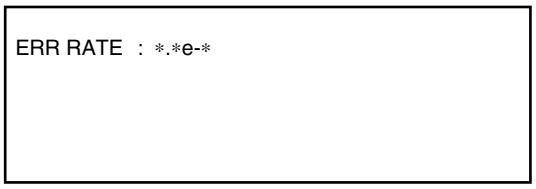
(3) Simple Error Rate Measurement (Subscreen 2)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key twice, in that order.
- While subscreen 1 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Measurement procedures]

① Display subscreen 2.
② Load the Test disc (GGV1025).
③ Judge the results of the error rate measurement by referring to Table 1 on page 89.



Subscreen 2

[Tips]

During VR mode playback, the average value of the past 10 VOBUs is displayed. During DVD-Video or Video mode playback, the average value of the past 256 sectors is displayed.
During VR mode playback, the speed ratio of the drive (/: normal, no indication: double speed) is also displayed.

Table 1: Thresholds when determining OK or Error

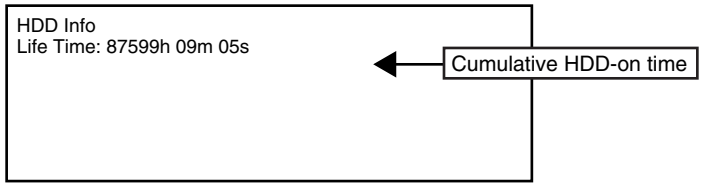
Disc type	Recording mode	Finalized or not finalized	Reference value
DVD-VIDEO	–	–	8.0×10^{-4}
DVD-R	Video mode	Finalized	1.0×10^{-3}
		Not finalized	1.0×10^{-3}
DVD-RW	Video mode	Finalized	1.0×10^{-3}
		Not finalized	1.0×10^{-3}

(4) HDD information (Subscreen 3)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key three times, in that order.
- While subscreen 2 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Mode description]



Subscreen 3

[Tips]

- **How the data on cumulative HDD-on time are processed in memory**

  Storage place:
  FLASH ROM

  Timing of referring to the data on cumulative HDD-on time:
  When the power is turned on, fails, the FLASH ROM is referred to.

  Timing of updating the data on cumulative HDD-on time:
  While the HDD is on, the data on cumulative HDD-on time in the RAM is updated every 3 seconds, and every time updating is executed the data are stored in the Backup SRAM. When the power is turned off, the data are stored in the FLASH ROM.

- **How to clear the data on cumulative HDD-on time**

  FLASH ROM:
  When the HDD Identification Setting is performed, the data on cumulative HDD-on time are automatically cleared. The HDD Identification Setting is automatically performed when the CPRM setting is performed on the CPRM setting screen (to display the CPRM setting screen, press the ESC then the STEREO keys).

  Notes:
  - The data on cumulative HDD-on time are not cleared when resetting to factory-preset values is performed.
  - The data on cumulative HDD-on time are not cleared when the system-control computer software is downloaded.

(5) OSD FILTER SETTING (SUB screen 4)

[Purpose] Depending on the monitor used, the character flicker on the OSD may stand out.
If a system, such as charavter flicker, appears on the monitor, select the filter response.

[Tools to be used]

Remote control unit for servicing
(GGF1381)

[How to enter]
- While the User Operation screen is displayed, press the ESC then DISP keys, then the DIG/ANA key four times, in that order.
- While subscreen 3 of the first screen is displayed, press the DIG/ANA key.

[How to quit] Press the ESC key.

[Setting procedures]

① Display subscreen 4.
② Select the setting from the key operation table.

OSD Filter Setting

OSD FILTER : ON

Subscreen 4

[Tips]

* If a setting data is changed, that is immediately reflected, and the data are written to nonvolatile memory (IC1102 : FLASH).
* The download for shipping mode see the data to default (ON).

[(Table 2) Key operation of OSD Filter setting]

Key	Operation	Setting data (* : default)	Remarks
[Rev x 3] [x 3 Fwd]	Select ON / OFF setting of OSD Filter	ON(*) / OFF	[Rev x3] : Set the OSD Blightness Filter OFF [x3 Fwd] : Set the OSD Blightness Filter ON
[ESC]	Turn off the OSD and quit from the function. (Appears the tuner screen.)	–	–

2. ATA/ATAPI Debug Screen (Second screen)

[Purposes]

To be used as a rough guide to judge whether the pickup unit is all right or not

- Dirt on the pickup lens
- Degradation of the laser diodes for reading CDs and reading/writing to/from DVDs

[Tools to be used]

Remote control unit for servicing (GGF1381)

Aluminum-coated test disc (GGV1025)

[How to enter]

- While the User Operation display is displayed, press the ESC, DISP, then 2 keys, in that order.
- While any subscreen of the second screen is displayed, press the DIG/ANA key repeatedly. The subscreens change cyclically.

[How to quit] Press the ESC key.

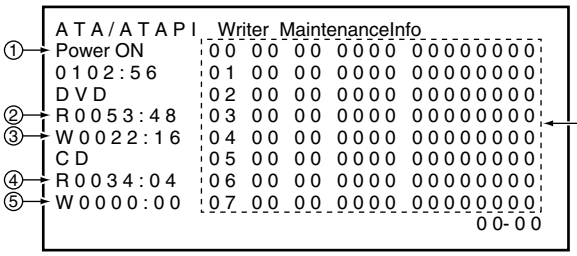
(1) Writer maintenance information of ATA/ATAPI DEBUG OSD (Subscreen 3)

[How to enter]

- While the User Operation screen is displayed, press the ESC, DISP then 2 keys, then the DIG/ANA key twice, in that order.

[How to quit] Press the ESC key.

[Procedures] Update the display by pressing the SEARCH key while subscreen 3 is displayed.



Error log for the Writer (Not for Service)

① Power-on time/cumulative power-on time
② Duration of emission of the laser diode (LD) for DVD-R/DVD while reading
③ Duration of emission of the LD for DVD-W/DVD while writing
④ Duration of emission of the LD for CD-R/CD while reading
⑤ Duration of emission of the LD for CD-W/CD while writing (This function is not used for this model.)

② If the total hours of duration of emission of the laser diode (LD) for DVDs while reading ② and that of emission of the LD for DVDs while writing ③ exceed 4,700 hours, the LDs may be degraded. Perform an LD degradation judgment, using subscreen 4.

[Tips]

MTTF hours for each LD (R9R Drive Assy [total hours of reading and writing])
DVD: 4,700 hours
CD: 11,000 hours
The ATA/ATAPI Writer Maintenance Info is obtained each time the power is turned on. Thereafter, the data on the subscreen is updated each time the SEARCH key is pressed (the updating command is sent) while this subscreen is displayed. Care must be taken when updating this subscreen, because an undesired command is inserted if it is executed while recording, etc.

(2) LD degration judgment of ATA/ATAPI DEBUG OSD (Subscreen 4)

[How to enter]
- While the User Operation screen is displayed, press the ESC, DISP then 2 keys, then the DIG/ANA key three times, in that order.

[How to quit] Press the ESC key.

[Notes]
- For correct measurement of items ① to ④ indicated in the display below, leave the unit at room temperature (25°C) for a while before turning it on, and do not load a disc.
- For RF measurement (item ⑤), it is recommended to use the Test disc (GGV1025).
  As the RF level differs depending on the characteristics of the pickup from product to product, it cannot be used for judging degradation of the LD. Use the RF level as a rough guide to know the difference between before and after lens cleaning.

[Procedures] To update the value for each item, press the SEARCH key while subscreen 4 is displayed.
For details on each item and the conditions of updating the values, see Table 2 below.

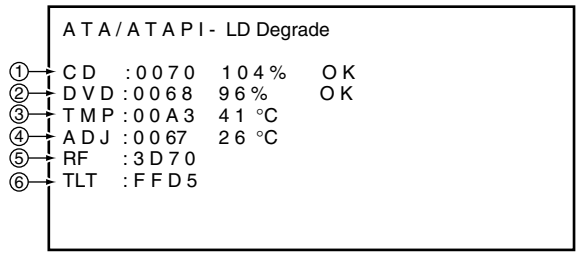


Table 2: Description of each item and conditions for updating data

No.	Item	Description	Conditions for updating by pressing the SEARCH key
①	CD	Degradation judgment of LD for CD. Regarded as NG when the value is 120% or higher (same standard as for the PC drive)	No disc inserted in the disc tray
②	DVD	Degradation judgment of LD for DVD. Regarded as NG when the value is 120% or higher (same standard as for the PC drive)	No disc inserted in the disc tray
③	TMP	Current temperature inside the Writer	No disc inserted in the disc tray
④	ADJ	Temperature (approx. 25°C) inside the Writer during adjustment	No disc inserted in the disc tray
⑤	RF	RF level (16-bit data, proportional calculation performed using the actual RF level value with 2.5 V = 0xFFFF as the maximum value, displayed in 4-digit hexadecimal)	During playback of disc medium (GGV1025)
⑥	TLT	Writer adjustment data for straight (non-HDD) model (FFFF is diplayed when the writer is not adjusted.)	No condition

If the results of degradation of the LDs for CDs and DVDs are both NG, replace the drive.

3. VR-Recording-Related Error Logs (Fourth screen)

[Purposes]

To roughly determine in which category shown below a symptom that is difficult to reproduce belongs.
For details on the categories of error logs displayed, see "Table 1: Description of VR-recording-related errors."

- Errors related to the MPEG Encoder
- Errors related to the drive system
- Errors related to copying
- Errors related to others
- Errors related to the HDD

[Tool to be used]

Remote control unit for servicing
(GGF1381)

[How to enter]

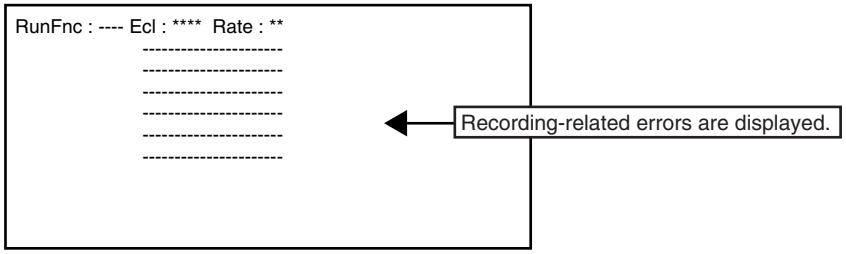
- While the User Operation display is displayed, press the [ESC], [DISP], then [4] keys, in that order.
- While any subscreen of the fourth screen is displayed, press the [DIG/ANA] key repeatedly.
  The subscreens change cyclically.

[How to quit] Press the [ESC] key.

[Description of each subscreen]

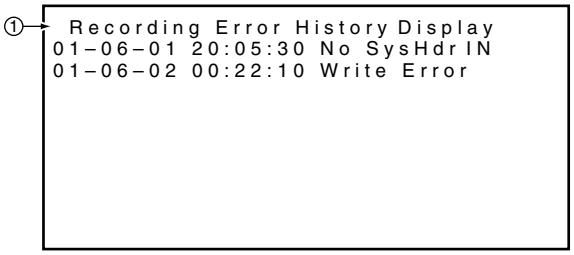
(1) VR-Recording-Related Error Logs (Subscreen 1)

- Errors related to recording are displayed on the lines "Rec Err:," as shown below.
  For details on errors, see "Table 1: Description of VR-recording-related errors."



(2) Subscreen 2 and 3 (These subscreens are not for service use.)

(3) VR-Recording-Related Error Logs (Subscreen 4)



① There are two error-log screens, on which up to 9 logs per screen are displayed.
(generation time [year-month-day, hour:minute:second], error data in simplified description)

[Tips]

- The two error-log screens can be switched by pressing the [SPEED+] or [SPEED-] key.
- For details on error messages, see Table 1 "Description of VR-recording-related errors".

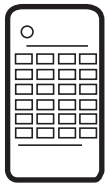
(4) Subscreen 5 to 11 (These subscreens are not for service use.)

4. VR-Playback-Related Error Logs (Fifth screen)

[Purposes]

It can be inferred that an operation that caused an error in the drive was performed or that a failure occurred in the drive if any of the error logs shown in "Table 2: Description of VR-playback-related errors" is recorded on this screen.

[Tool to be used]



Remote control unit for servicing
(GGF1381)

[How to enter]

- While the User Operation display is displayed, press the ESC, DISP, then 5 keys, in that order.
- While any subscreen of the fifth screen is displayed, press the DIG/ANA key repeatedly.
  The subscreens change cyclically.

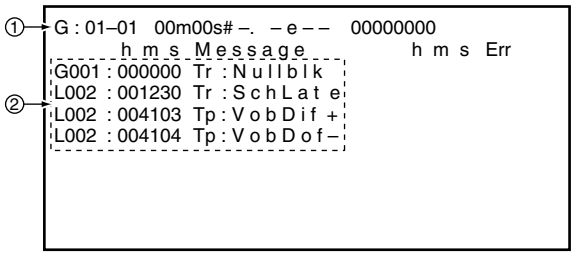
[How to quit] Press the ESC key.

[Description of each subscreen]

(1) Subscreen 1 (This subscreen is not for service use.)

(2) VR-Playback Error Logs (Subscreen 2)

- For details on error messages, see Table 2 "Description of VR-playback-related errors".
- If a VR-playback-related error is generated, a problem in data reading from the disc may be suspected.
  (The possibility of a problem on the drive side is high.)


①
G : 01–01 00m00s# –. – e – – 00000000
h m s Message h m s Err
②
G001 : 000000 Tr : N u l l b l k
L002 : 001230 Tr : S c h L a t e
L002 : 004103 Tp : V o b D i f +
L002 : 004104 Tp : V o b D o f –

① Data on location of the display (Display only in disc playback with the VR mode)
Original(G)/play list (L), title No., chapter No. [X:XX-XX],
time of the display (min, sec, frame) [XXmXXsXX],
busy mark of the virtual mechanical-control computer [#],
error rate of the transfer data [X.XeXX],
playback logical address (ID) [XXXXXXXX]

② Error message log
Original(G)/play list (L), title No., time of generation (min, sec) [XXX:XXXX],
playback-related error log for the last 13 errors [XX:XXXXXXX]

Table 1: Description of VR-recording-related errors

Any error message marked with * is displayed "RecErr : ---------" on the Subscreen 1 of the fourth screen.

● Error related to MPEG Encoder

Error Message	Description
AVEnc Hang	AVEncoder failed
IN Encode *	Changes cannot be made in the process of encoding
No SysHdr IN	System packet is not input periodically
Stm Start NG	Failure to start encoding (reasons not clear)
Stream NG	Inappropriate input stream data
Strm Start NG	Timeout waiting for system packet input at the beginning

● Error related to Drive system

In a case of an error in the drive system, scratches or dirt on a disc, or a problem of the drive itself (dirty pickup) may be suspected.

Error Message	Description
Bdr Cls NG	Close Border failed
Bdr Opn NG	Open Border failed
BUF Overflow	Overflow of the Stream Buffer
CLS Rzon Fail	Video Mode Close Rzone failure
Drive Hang	The Drive is hung up.
Drv Err	General error of the drive
Drv Hard Err	Abnormality in the drive hardware or firmware
Drv TimeOut	Timeout waiting for drive operation
Fail Repair	Repair failed
Format NG	Format failed
May Be V mode	Although TMP_VMGI is not written, it may be Video Mode disc.
Mech No Res	No response from the mechanical-control computer
MKB Invalid	MKB reading error
NWA Exhaust	NWA surpassed and impossible to use
OPC NG	OPC failed
PCA Full	PCA has been used up.
Read Err	Reading failed, ECC failed, etc.
ReadOnly DISC *	Because some data are invalid, data cannot be written
RMA Full	RMA has been used up.
Rzn Cls NG	Close RZone failed
Rzn Rpr NG	Repair RZone failed
Rzn Rsv NG	Reserve RZone failed
TMP-VMG WrErr	Video Mode TMP VMGI Write Error
VTSI_B Wr Err	Video Mode VTSI BUP Write Error
VTSI_B2 Wr Err	Video Mode VTSI BUP Write Error (After Layer Change)
VTSI Wr Err	Video Mode VTSI Write Error
VTSI2 Wr Err	Video Mode VTSI Write Error (After Layer Change)
Write Err	The Drive failed to write and could not be recovered.

● Error related to Dubbing

Error Message	Description
H2D CP SomeNG	Other NG HDD →DVD copy
Mem get NG	Video Mode Copy Memory has not ensured.
Strm TransfNG	Video Mode Copy Stream Transfer NG
Tracon Trn NG	Video Mode Copy Tracon tranfer has not been completed.
VC Cell Max	Maximum number for Video Mode copy Cells exceeded
VC CopyCancel	Video Mode Copy Copy Cancel

● **Error related to Dubbing (continued)**

Error Message	Description
VC FlushC NG	Video Mode Copy Flush Cache NG
VC HDD C Err	Inappropriate Video Mode Copy HDD content
VC HDD Inf NG	No information on Video Mode Copy HDD
VCHDD Info NG	Obtaining Video Mode Copy HDD Cell information failed
VC Idling NG	Video Mode Copy idling NG
VC Pck Anl NG	Analizing Video Mode Copy Pack failed
VC Transf Stp	Video Mode Copy Transfer Stop
VC TSO BLK NG	Video Mode Copy TSO Block transfer has not been completed.
VC VOBU SizeE	Video Mode Copy VOBU Size NG
V Rsv RzoneNG	Video Mode Copy Reserve Rzone failed
V2H APP FL NG	VR → HDD APP FLG is OFF
V2H Aud Ch NG	VR →HDD Audio Channel NG
V2H Aud Md NG	VR →HDD Audio Mode NG
V2H Aud Stm N	VR →HDD Audio Stream number NG
V2H SRC Prot	VR →HDD copy prohibitted material
V2H Unknown	VR →HDD other NG
V2H VOBU TMNG	VR →HDD Play back time of each VOBU is different
V2H V Reso NG	VR →HDD Video resolution NG

● **Other Errors**

Error Message	Description
Abort *	Cancellation
Already open	Extension file is already opened.
BK BATT Down	Backup RAM data has been erased.
BK FSYS Dirty	Backup RAM data has not been wrtten on the File Sys.
BUG	Some bugs
BusReset Done	Bus Reset has been excecuted.
Cell Close NG	Cell Close NG
CPRM IC NG	Inappropriate CPRM IC
Dir Depth Err	Tree of Directory is too deep.
Disc Full	No further data can be written because the disc is full.
DRAM CLR Err	Video Mode DRAM (Stream Buffer) Clear failure
DRAM NG	Abnormality in access to the Work DRAM
Drive Destroy	The drive has crashed.
EncModul Hang	Encoder routine is hung up.
F Alrdy Exst	Extension file is already exist.
File cansel	Extension file is canseled.
FileNot Exist	Extension file is not exist.
Format Excec	Formatting has been executed.
Invalid Disc *	The disc cannot be recognized.
Invalid Param *	Invalid parameter
Invalid P VMG	Information of +VR is NG.
Invalid TMVMG	Invalid TMP_VMGI content
Invalid UDF *	Invalid UDF content
Invalid VMG *	Invalid VMG content
Invalid VTSI	VTSI information of +VR is unusual.
Irr Action *	Incorrect action
MKB REVOKED	Error in gaining data
Limit Over *	Standard maximum limit exceeded
No More Info *	No more space in the internal work-management area
No Permission *	No permission to write to the disc
No Video	No video input (not locked)
Now Busy *	In the process of the emergency processing
NV Pck DMA Er	Inappropriate NaviPack DMA
NV Pck MK Err	Error in creating NaviPack
Ourob Strm NG	Inappropriate stream data to the Ouroboros input
Over Heat	Abnormal temperatute
PARAM NO ACCP	Recording parameter is not matched.

● **Other Errors (continued)**

Error Message	Description
Process Over	Process is overfull.
Protect Src *	Source to be recorded is copy-protected.
Rec Pause *	No operation permitted during recording pause
Relocation Do	VR-recording data was relocated
Repair Excec	Repairing has been executed.
Something *	Undetermined error
SRAM NG	Abnormality in access to the backup work SRAM
Status NG *	Abnormality in change of statuses
SW PVR	Switch to +VR playback process
SW Vpb mode *	Switching to video playback routine is required.
SW Vrec mode *	Switching to video recording routine is required.
Unmatch Stamp *	Impossible to modify because of nonmatching time stamp
VBR-SRAM NG	Abnormality in VBR SRAM
V Categ ID NG	Inappropriate Category ID
V Cate Inf NG	Inappropriate Category information
V Ext MAX Ovr	Count Max exceeded
V ExtToo Big	The extension file is too large.
V Ext TY NG	Type NG
Virgin DISC	Virgin Disc
VOBU Info NG	Inappropriate VOBU information
WaterMark Det	Watermark detected
WM Cracked	WM Cracked

● **Error related to HDD**

Error Message	Description
Do nothing	Do nothing for demand.
ESFSYS CORUPT	easyfsys error
ESFSYS INIT	easyfsys initializing
HDD Buff High	High-level process executed for the HDD Buffer
HDD DEF DONE	HDD deflag finished
HDD DEF ERR	HDD deflag error
HDD Destroy	HDD is not recognized on the bus.
HDD INFO BAD	Incorrect HDD Management Data
HDD Initialize	HDD initialized
HDD IRRG POFF	Abnormal power off
HDD MBR NG	Inconsistent MBR data
HDDReset Done	HDD Reset executed
HDD ROMSUM NG	Rom-code check sum NG
HDD SIG NG	Inconsistent HDD Management Data Magic
HDD SMART NG	Inappropriate HDD SMART
HDD Trans Err	DMA error in HDD copy transfer
HDD unauthor	Inconsistent HDD serial No.
HDD Zero WR	MBR was witten
Task No Activ	Task has not been activated.
TT Rec Over	Title recording time full

● **No Error**

Error Message	Description
Non Err *	Normal

Abbreviations:

ECC = 4 byte Code for Error Correction
UDF = Universal Disc Format
PCA = Power Calibration Area
OPC = Optical Power Control
NWA = Next Writable Address
VMG = Video Manager
RMA = Recording Management Area
MKB = Media Key Block
TMP_VMGI = Temporary Video Manager Information
Border = from Lead-in to Lead-out

Table 2: Description of VR-playback-related errors

Error Message	Description
Av : B/CTOvr	AV1: Buffer-clear timeout
Av : SpmTOvr	AV1: Timeout for a step command
Av : StrmOvr	AV1: Timeout for waiting for stream ready
Av : TpmTOvr	AV1: Timeout for TP mode change
CC_OS_ERR	Closed caption task: OS error
ERR_RCV!	TPP task: Detects hang-up of AV decoder and starts recovery
Mn : Av1Hang	Main task: Detects hang-up of AV decoder and starts recovery
Rv : LnkFail	Reverse playback task: Starts compensation by detecting link failure
Rv : LnkTOvr	Reverse playback task: Timeout for waiting for link
Rv : OplTOvr	Reverse playback task: Timeout for waiting for I-picture of the open GOP immediately after starting decoding
Rv : OpnTOvr	Reverse playback task: Timeout for waiting for B-picture of the open GOP immediately after starting decoding
Tr : OrderEr	Transfer task: Inconsistent order
Rv : R2FTOvr	Reverse playback task: Starts retrial after detecting timeout from reverse pause to forward pause
Rv : TopVbEr	Reverse playback task: Forced termination because of a possible error of the top data during reverse normal playback
Rv : 1stTOvr	Reverse playback task: Timeout for waiting for interruption to the top VOBU immediately after starting decoding
Tp : midNULL	TPP task: The management information pointer designated was NULL.
Tp : RStepEr	TPP task: Although the reverse step had failed, the operation was forcibly terminated because the top cell was located.
Tp : ScanNg	TPP task: Failure to set the TPP memory when scanning was canceled.
Tp : tppErr	TPP task: Inconsistency occurred.
Tp : VobDif+	TPP task: The decoder STC advances by 1 VOBU hour.
Tp : VobDif-	TPP task: The STC of the management information advances
Tr : NaviErr	Transfer task: Inconsistency between NAVI (navigator) of management data and actual NAVI
Tr : NullBlk	Transfer task: NULL at the top block (Detecting NG stream made at the DVR-1000 series and starting protection process.)
Rv : OrderEr	Reverse playback task: Inconsistent order
Tr : ReadErr	Transfer task: ATA read error
Tr : SchLate	Transfer task: ATA search late
Tr : SemTOvr	Transfer task: Timeout for gaining semaphore (no synchronization with the display)

Abbreviations:

STC = System Time Clock
VOBU = Video Object Unit
GOP = Group Of Picture
B-picture = Bidirectionally predictive-picture
I-picture = Intra-picture
P-picture = Predictive-picture
TP mode change = AV1 term (Trick Play mode change)

7.1.6 DV SERVICE MODE

1. DV debug

[Purpose]

To check whether communication between a DV device and the unit is normal when a DV device is connected

[Tools to be used]

Remote control unit for servicing (GGF1381)

- DV device
- DV cable

[How to enter] Press the ESC , DISP then 3 keys, in that order.

[How to quit] Press the ESC key.

[Mode description]

① **(DV/1394) Init:**OK **AV:**02 **DV**:01

② [**Recorder**] **GUID:**00E0360004A00001

③ [**DV**] **GUID:**0080880303480E96
④ **VN:**VICTOR **MN:**GR-D50K
⑤ **TM:**C3 **TS:**75 **CT:**32 **WP:**01 **PS:**FF **OS**:00
⑥ **CA:**A000002020 **CV:**FF **MD:**VTR
⑦ [**DVdecode:**Yes] **LineSys:**525-60
⑧ **TC:**00h20m35s02f **RD:**02/02/05 **RT:**10h34m50s
⑨ **ASPECT:**4:3 **CGMS:**000000 **APSTB:**00 **DEC:**525-60
⑩ **SF:**32KHz **QU:**12bit **AMODE:**4) Stereo

Boldface alphanumerics : Fixed indications
Nonboldface alphanumerics : Variable indications

No.	Item	Description	Remarks
①	Init	Whether the initialization of 1394 LINK and DV order inside PRISM2 has been completed (OK) or not (NG)	
	AV	Number of AV devices recognizing connection	Identification number of AV devices including D-VHS, etc other than DV devices.
	DV	Number of DV devices recognizing connection	If the number does not become 01 even if a DV device is connected, identification of that device fails.
②	GUID	GUID set in ConfigROM of the unit	GUID : Global Unique ID (Specific ID for DV devices)

No.	Item	Description	Remarks
③	GUID	GUID set in ConfigROM of the DV device connected	Data are displayed only if one DV device is identified.
④	VN	Vendor name set in ConfigROM of the connected DV device	Data are displayed only if one DV device is identified. (Depending on the device, the vendor name may not be set in ConfigROM.)
	MN	Model name set in ConfigROM of the connected DV device	Data are displayed only if one DV device is identified. (Depending on the device, the model name may not be set in ConfigROM.)
⑤	TM	Transport Mode data obtained from the DV device	Data are displayed only if one DV device is identified.
	TS	Transport State data obtained from the DV device	
	CT	Cassette Type data obtained from the DV device	
	WP	Write-protection data obtained from the DV device	
	PS	Power-state data obtained from the DV device	
	OS	Output signal mode data obtained from the DV device	
⑥	CA	Connect AV data obtained from the DV device	Data are displayed only if one DV device is identified.
	CV	Camera/Vtr mode data obtained from the DV device	
	MD	DV device mode	Camera or VTR is displayed only if one DV device is identified.
⑦	[DVdecode:XXX]	Whether Yes (in the process of requesting DV input) or No is indicated in XXX	Normally, Yes is indicated only when CH is set to DV.
	LineSys	Input Line System setting	
⑧	TC	Time-code data of the DVdecode Stream, or response data of the Time Code command	Stream time-code data are obtained when the DV signal is inputted. Otherwise, time-code data are obtained through an AV/C command.
	RD	Rec Date of DVdecode Stream	
	RT	Rec Time of DVdecode Stream	
⑨	ASPECT	Aspect Ratio of DVdecode Stream	
	CGMS	CGMS of DVdecode Stream (from left to right, CGMS data of bits 5-4: Audio ch 2, bits 3-2: Audio ch 1, and bits 1-0: Video)	*CGMS (Copy Generation Management System): The two-digit codes added to broadcast programs represent the following: 00: Copy freely, 10: Once copy, 11: Never copy
	APSTB	APS trigger bit of DVdecode stream	
	DEC	With/without DVdecode stream input	With input: Signal type (525-60, 625-50, 1125-60, 1250-50, or Invalid) is indicated, Without input: "No" is indicated.
⑩	SF	Sampling Frequency of DVdecode Stream	If SF is 44 kHz, it is considered that 44.1-kHz audio is input, and sound is muted on the unit.
	QU	QUANTIZATION of DVdecode Stream	
	AMODE	AUDIO MODE of DVdecode Stream	

2. Simple Diagnosis of DV

Symptoms		Location in the Debug Screen	Items to be Checked, and Conditions	Possible causes
No operation for DV input	1	DV ①	Check the init indication: OK: Initialization of 1394 LINK and DV decoder inside PRISM2 appropriately completed NG: Initialization of 1394 LINK and DV decoder inside PRISM2 has not been completed properly.	Defective IC1001(PRISM 2) / IC5101(1394PHY), improper connection between IC1001 / IC5101 defective soldering, etc.
	2	DV ①	Check the number of DV devices when one DV device is connected to the recorder: 01 : The connected DV device is correctly identified. Other than 01 : The connected DV device is not correctly identified.	Defective DV terminals, improper connection of the DV-terminal board, defective IC5101(1394PHY), defective cables, an IEEE 1394 device other than the DV
No picture nor sound for DV input	1	DV ⑨	Check of DV decoding when the recorder channel is set to DV: Yes: The recorder is in the process of a DV input operation No: The recorder is not executing a DV input operation	Defective IC1001(PRISM2), defective soldering, defective power supply, etc.
	2	DV ⑪	Check DEC: 525-60: An NTSC DV signal is input from the DV device. 625-50: A PAL DV signal is input from the DV device. No: No DV signal is input from the DV device.	Defective DV terminals, improper connection of the DV-terminal board, defective IC, defective source device **Note:** As to a model having the Input Line System setting, if the setting and the actual input signal system do not match, no picture appears.
DV input recording impossible	1	DV ⑪	Check CGMS:	Recording cannot be performed for a copy-protected source.
No sound for DV input	1	DV ⑫	Check SF: 32 khz: An audio signal with 32-kHz sampling frequency is being input. 48 khz: An audio signal with 48-kHz sampling frequency is being input. 44 khz: An audio signal with 44.1-kHz sampling frequency is being input.	An audio signal with 44.1-kHz sampling frequency is muted.

7.1.7 EPG SERVICE MODE (Except DVR-433H model)

[Purposes]

Reasons for the following malfunctions can be inferred by checking the conditions for obtaining the past EPG data:

① EPG data cannot be obtained.
② Some EPG data obtained are missing.

[Tool to be used]

Remote control unit for servicing
(GGF1381)

[How to enter] • Press the [ESC], [DISP], [+10] then [7] keys, in that order.

[How to quit] Press the [ESC] key.

[Description of the mode]

1. Summary screen

```
    0         1         2         3         4
    01234567890123456789012345678901234567890123456
00  (EPG EURO)
01  Next Data  Download Time : 14:00
02             Duration     : 01h30m
03
04
05
06
07  EPG Data Receive Err Summary
08  Date  Start  End   MD  CH  RcvPkt   TotalErr
09  03/31 13:00 13:30 DL  03  001853   000000
10  03/31 09:00 11:00 DL  03  001192   000000
11  03/31 08:00 08:05 HS  --  000645   000000
12  03/31 00:00 00:00           000000   000000
13  03/31 00:00 00:00           000000   000000
14  03/31 00:00 00:00           000000   000000
```

Lines 01-02	The next download starting time for the EPG data is displayed. Next Data Download Time: Starting time Duration: Duration required for acquiring the EPG data
Lines 09-14	The 6 latest error logs when EPG data were received are displayed, with the latest one at the top.

Date	: Month/day when reception started
Start	: Time when reception started
End	: Time when reception ended
MD	: Method for acquiring the EPG data (HS: Host scanning process, DL: Downloading process of the EPG data)
CH	: Data-receiving channel
RcvPkt	: Total number of received packages. A number 999,999 or greater is displayed as "999999."
Total Err	: Total errors during reception. The sum of Hamming Err, Trans Err and InvLine Err numbers indicated on the Detail screen. A number 999,999 or greater is displayed as "999999."

[Tips] In a case where only "HS" is displayed in the MD column of the logs, the host channel has not been found. It is necessary to check the country and postal-code settings in the user settings.

2. Detail screen

[How to enter] Press the DIG/ANA key while the Summary screen is displayed. Up to 6 detail screens (1 to 6) are displayed, one each time the DIG/ANA key is pressed. Each detail screen 1 to 6 corresponds with the EPG reception error logs from the top on the Summary screen.

[How to quit] Press the ESC key.

[Description of the Detail screens]

```
    0         1         2         3         4
    01234567890123456789012345678901234567890123456789
00  (EPG EURO)
01  EPG Data Receive Err Details - 1
02
03  Date : 03/31
04  Start Time : 13:00   END Time  : 13:30
05  Host CH    : 03      P-ON Kind : Download
06
07  Data Receive Part   Total Err  : 000000
08  Pkt Rcv Num  : 001853  Pkt Snd Num : 001853
09  Inv Line Err : 000000
10  Slice Cont : Auto EQ : OFF LV : -h
11  Temporary  Buffer  Information
12  Pool  Num   : 000000  Max  Store  : 000000
13  Discard Pkt : 000000  Use  Num    : 000000
14
```

Line	Display item	Description	Remarks
Line 01	EPG Data Receive Err Details-X	The rightmost figure represents the number of the current detail screen. This number corresponds to the order of the EPG reception error log from the top.	
Lines 03-05, Reception conditions	Date Start Time END Time Host CH P-ON Kind	: Month/day when reception started : Time when reception started : Time when reception ended : Data-receiving channel : Methods for acquiring the EPG data (host scanning and downloading)	Only during initialization, host scanning is automatically executed to find the host broadcast.
Lines 07-10, details on errors during reception	Total Err	: Total numbers of errors during reception. The total number of Hamming Err, Trans Err and InvLine Err indicated on the Detail screen. A number 999,999 or greater is displayed as "999999."	Total Errors: If the total number of errors reaches two digits or greater, it is likely that EPG data acquisition failed. Display subscreen 1 of the first screen and check the electric field intensity from the AGC level.
	Pkt Rcv Num Pkt Snd Num	: Total number of received packages. A number 999,999 or greater is displayed as "999999." : Total number of packages that were sent to the application program among all the received packages. A number 999,999 or greater is displayed as "999999."	If the total number of received packages is 0, it is likely that the country and postal-code settings are wrong.
	InvLine Err	: Total number of errors that were generated by receiving data from invalid lines. A number 999,999 or greater is displayed as "999999."	
	Slice Cont	: Slice level control Auto-Tu Con, Manual - Syscon.	
	EQ	: Equalizer setting (ON, OFF)	
	LV	: Slice level (10~30 hex) (Only when the slice Cont is Manual.)	

Note: The data on lines 12-14 are for software development, not for service use.

7.1.8 AGING MODE

[Purposes]

If symptoms regarding recording/ playback of discs and/or the HDD that your customer claimed are difficult to reproduce, they can be reproduced with a long-time test in Aging mode.

[Tools to be used]

Remote control unit for servicing (GGF1381)

Remote control unit supplied with the unit (VXX2969)

Commercially available, recordable DVD-R and DVD-RW discs

[Notes]

- When aging for the DVD-RW and HDD is executed, all recorded data on them will be erased.
- Commands from the remote control unit are accepted during Aging mode.
- If Aging mode is quit using the ESC key, indications on the FL display will return to normal display.
- Cancel timer settings before entering Aging mode.
- Set the recording rate beforehand. It cannot be changed during Aging mode.

[How to enter]

① Press the DVD key to switch to DVD.
② Load a recordable disc.
③ Select the input function of a recordable source.
④ After disc detection is performed, press the ESC then REP.B keys on the remote control unit for servicing to enter Aging mode.

[How to quit]

Press the ESC key on the remote control unit for servicing to quit Aging mode and return to Normal mode.

Notes:

- If during recording: Recording is stopped.
- If during playback: Playback is paused.
- If during initialization: The unit stops after initialization is finished. (aging for RW only)
- If the tray is being opened/closed: The unit stops after the tray is opened/closed. (aging for RW only)

[Description of operation]

Aging for the DVD-RW/DVD-R

Aging for the DVD-RW	Aging for the DVD-R
During Aging mode, the following operations are repeated in the order shown below. ① The tray opens. ② The tray closes. ③ Initialization ④ Recording for 60 minutes ⑤ Playback for 45 minutes	During Aging mode, the following operations are repeated in the order shown below. ① The tray opens. ② The tray closes. ③ Recording for 1 minute ④ Recording pause for 6 minutes ⑤ Recording stops. ⑥ Playback for 1 minute ⑦ Playback pause for 6 minutes ⑧ Playback stops. **Note:** A continuous test of the above operations is possible for approximately 23 hours.
③ Initialization is performed according to the setting specified in "DVD-RW automatic initialization" (accessed by selecting "Unit Setting" then "Option").	After ② the tray closes, disc detection is performed, and if 99 titles have already been registered, the unit stops there. The number of loops is retained and indicated on the FL display. An error indication is retained as an OSD.
During Aging, the number of loops is indicated on the FL display, as shown below. [AGING 0001]	During Aging, the number of loops is indicated on the FL display, as shown below. [AGING 0001]
If an error is generated, the aging operation stops. **Note:** Indications on the FL display are retained, and this information is also retained as an OSD.	If an error is generated, the aging operation stops. **Note:** Indications on the FL display are retained, and this information is also retained as an OSD. **Note:** Recording time depends on the recording rate set. For example, if the recording rate is MN32, only up to 60 titles can be registered. Check the setting for recording rate before performing aging.

[Aging for the HDD]

[How to enter]

① Press the HDD key to switch to HDD.
② Press the ESC key then the REP.B key on the remote control unit for servicing to enter Aging mode.

[How to quit]

Press the ESC key on the remote control unit for servicing to quit Aging mode and return to Normal mode.

Notes:

- If during recording: Recording is stopped.
- If during playback: Playback is paused.
- If during erasure of all memory data from the HDD, the unit stops after all memory data have been erased.

[Description of operation]

During Aging mode, the following operations are repeated in the order shown below.
① Erasure of all the memory data from the HDD
② Recording for 60 minutes
③ Playback for 60 minutes

[Tips]

During Aging, the number of loops is indicated on the FL display, as shown below.
[AGING 0001]

If an error is generated, the aging operation stops.

Note:
Indications on the FL display are retained, and this information is also retained as an OSD.

7.1.9 HDD CHECK MODE

How to diagnose failure of the hard disc drive (HDD)

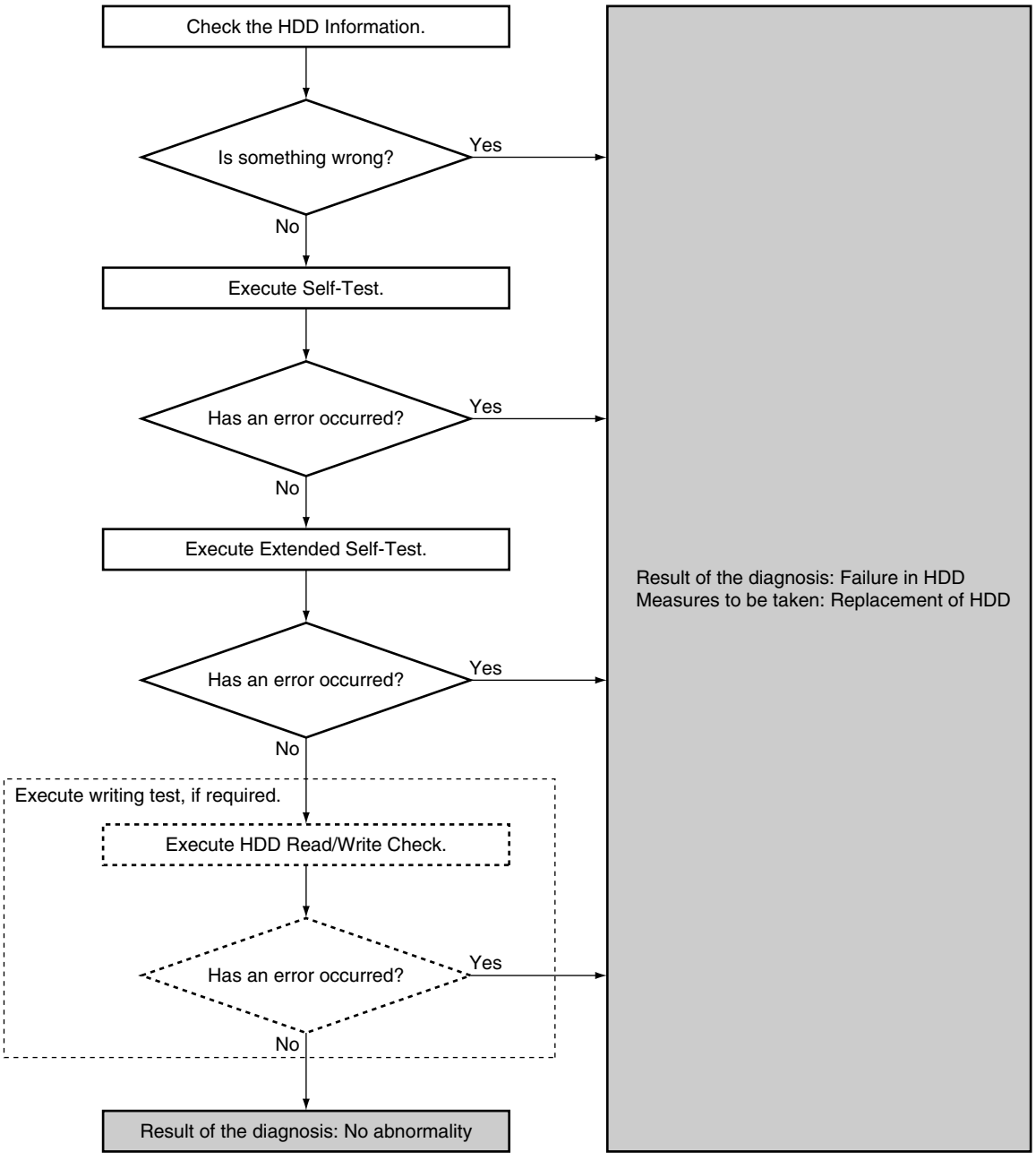
Purpose:
With use of the HDD-diagnostic program contained in the product itself, physical errors on the HDD can be diagnosed. Use this program to diagnose whether or not the HDD is in failure when one of the symptoms indicated below is recognized, or when a failure in the HDD is suspected.

Symptoms of failure in HDD:
(1) HDD Error
(2) Failure in HDD recording or playback
(3) HDD not recognized

Tool to be used:
Remote control unit for servicing (GGF1381)

1. Flow of HDD diagnosis

(1) Flowchart of HDD diagnosis



(2) Overview of the diagnosis items

HDD Information	This is a display for checking the HDD information, such as the model name of the HDD, continuous power-on time, authentication status, and results of the diagnosis on the end of service life.
SELF TEST	This is a simplified diagnosis for the HDD. A serious failure in the HDD can be detected with this test. Time required for testing: Approx. 90 sec.
EXTENDED SELF TEST	This is a reading test across all sectors of the HDD. Data recorded on the HDD will not be erased, because no writing operation is performed. Time required for testing: Approx. 3 hours/160 GB
HDD Read / Write Check	This is a writing, reading, and comparing test across all sectors of the HDD. **All data recorded on the HDD will be erased**, because all the data are to be overwritten. **Be sure to obtain your client's consent beforehand.** Time required for testing: Approx. 11 hours/160 GB

2. How to start or terminate the diagnostic program

How to start/terminate the diagnostic program

Use the remote control unit for servicing.

How to start: Press the "ESC", "CX", "0", and "1" keys simultaneously.

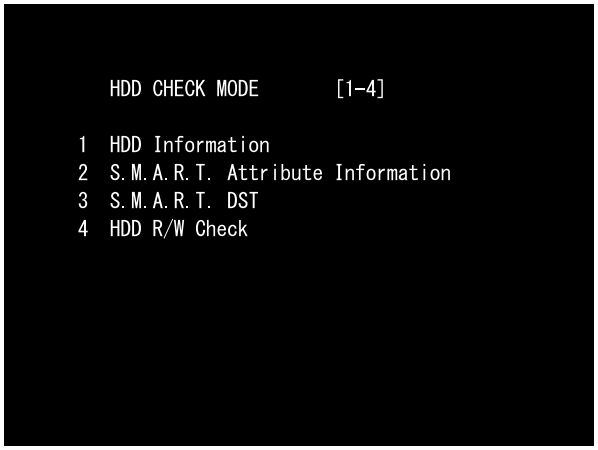
How to terminate: Press the "ESC" key.

Do NOT perform other operations on the unit while the HDD diagnosis is in progress. Although the diagnostic program is designed to function independently from the unit's functions, an operation on the unit during a diagnosis may cause a malfunction.

The status of the unit recommended during diagnosis is as follows: All stop, no timer recording (including auto-recording), and Input selection to L1-L3.

3. Diagnosis procedures

① Display the menu on the screen.
The menu indicated below is displayed when the diagnostic program is started. To enter each mode, press the corresponding key "1"-"4" on the remote control unit for servicing.



Tests to be executed
① HDD Information:
Check of the HDD information
② S.M.A.R.T. DST:
Executing a simplified test or a reading test of all data
③ HDD R/W Check:
Executing a writing/reading test of all data. All data on the HDD will be erased if this test is executed.

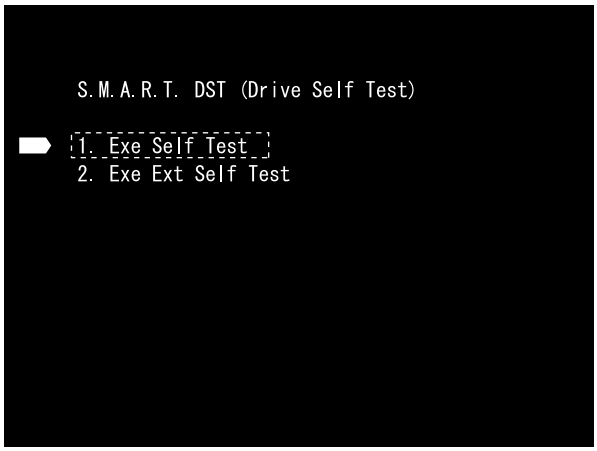
Note: "2. S.M.A.R.T. Attribute . . ." is not to be used.

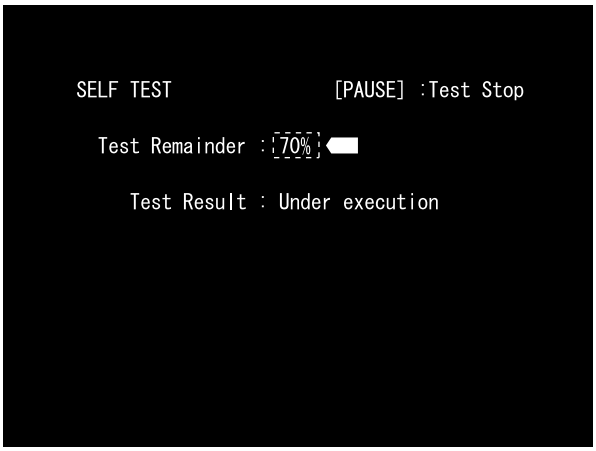
② Check the HDD information.
Press the "1" key on the remote control unit for servicing. Check the following data:
Model: Is the correct model name of the HDD displayed?
Recog. No: Is a positive value displayed?
SMART threshold: Is "not exceeded" displayed?

Detailed description
① Model:
For the correct model name, refer to the display of the unit.
② Recog. No:
Positive value: The HDD has been authenticated.
Negative value: The HDD has not been authenticated.
③ SMART threshold:
exceeded: The HDD has come to the end or near the end of its service life.
not exceeded: The HDD has not reached the end of its service life.

To return to the menu screen, press the "Clear" key.

③ Execute Self-Test.
Press the "3" key on the remote control unit for servicing while the menu screen is displayed.
When the following screen is displayed, press the "1" key to start the Self-Test.



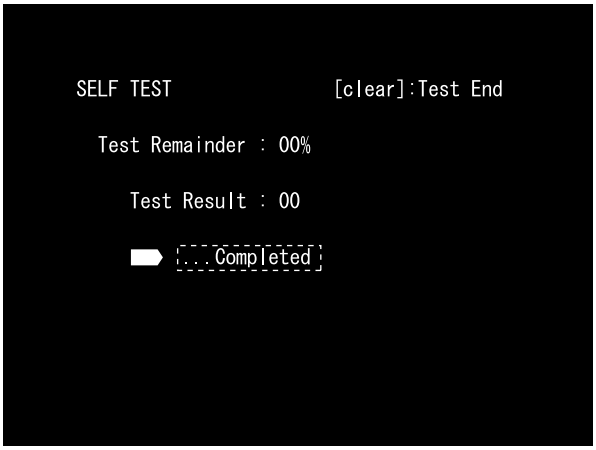


The progress of the test is displayed on the screen. The percentage remaining of the test is displayed on the screen, and the test is terminated when the percentage reaches 00%.
Check whether or not an error has occurred after the test is finished.

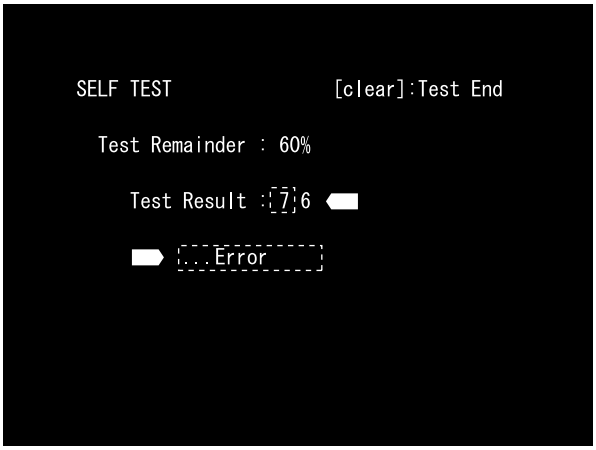
Diagnosis results
- Without an error: ". . . Completed" is displayed.
  Then, proceed to the Extended Self-Test.
- With an error: ". . . Error" is displayed. Look at the number in Test Result.
  If the place value for tens is 1 or 2, execute the Self-Test again.
  If it is from 3 to 7, the HDD must be replaced.

Note: If the result of the second test is the same, replacement of the HDD is required.

Example: No error

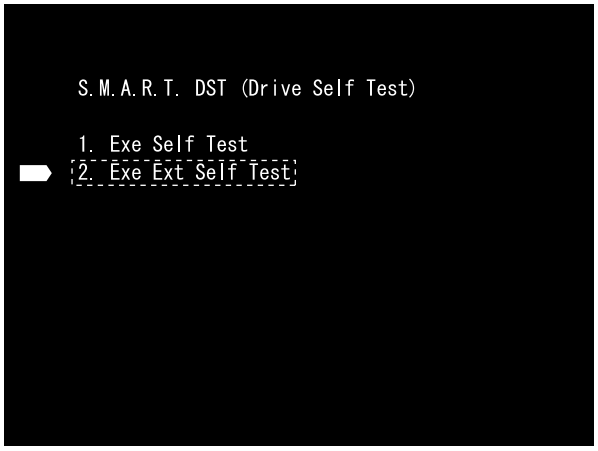


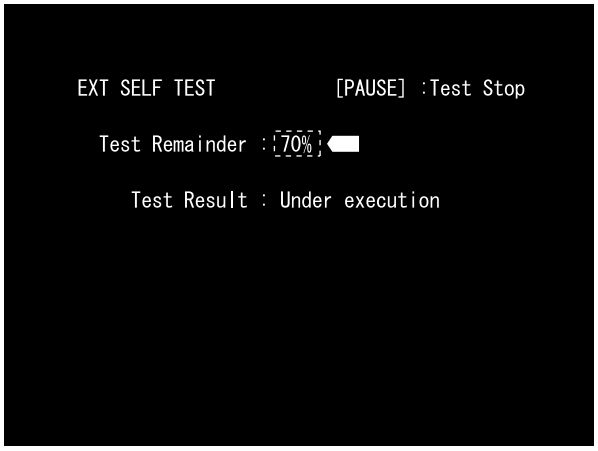
Example: With an error



To return to the menu screen, press the "Clear" key.

④ Execute the Ext (Extended) Self-Test.



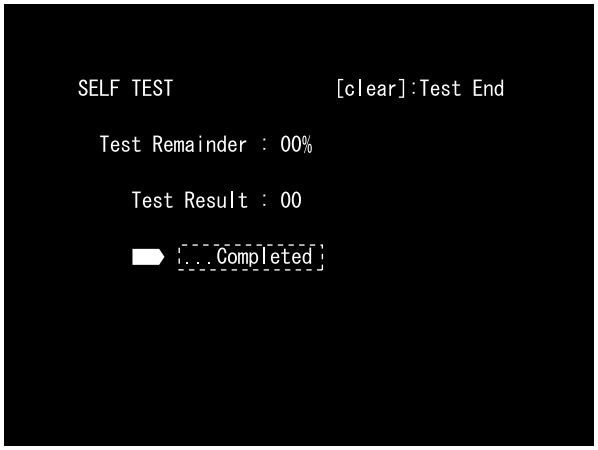


Press the "3" key while the menu screen is displayed, then the "2" key on the remote control unit for servicing. The Extended Self-Test starts. The percentage remaining of the test is displayed on the screen, and the test is terminated when the percentage reaches 00%. Check whether or not an error has occurred after the test is finished.

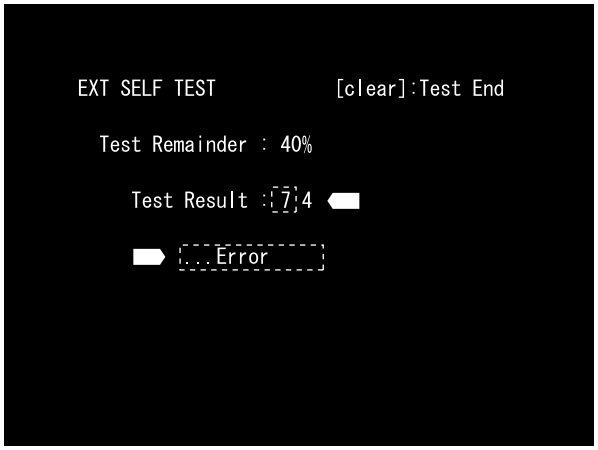
Diagnosis results
- Without an error: ". . . Completed" is displayed.
  If no error occurs up until this stage, HDD operations are normal except for writing operations.
  If the unit has a failure in HDD playback, a block other than the HDD may be in failure.
  If the unit's failure is in HDD recording, however, the next HDD Read/Write Check must be executed to test writing operations.
- With an error: ". . . Error" is displayed.
  Look at the number in Test Result.
  If the place value for tens is 1 or 2, execute the Ext Self-Test again.
  If it is from 3 to 7, the HDD must be replaced.

Note: If the result of the second test is the same, replacement of the HDD is required.

Example: No error

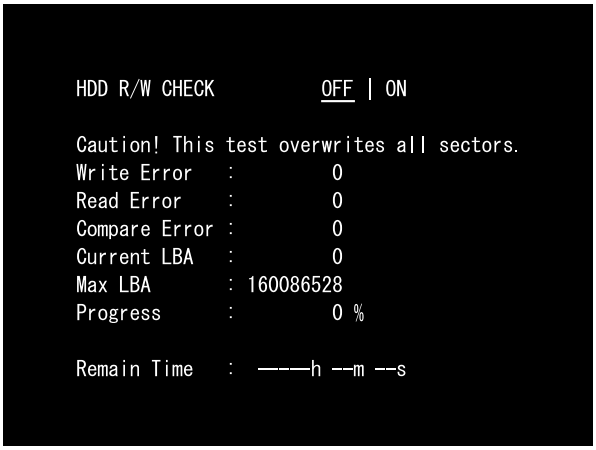


Example: With an error

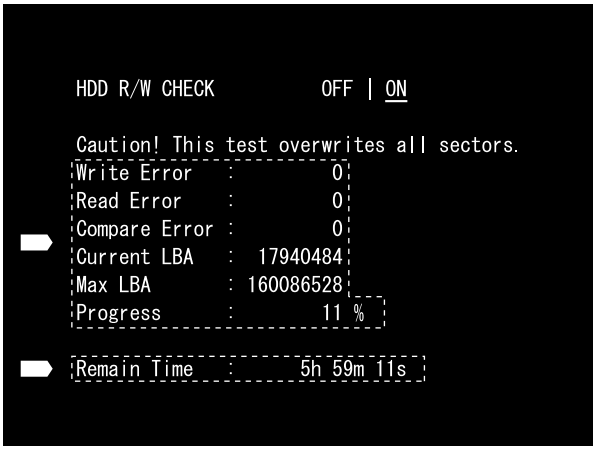


To return to the menu screen, press the "Clear" key.

⑤ Execute the HDD R/W Check.
Before executing this test, **be sure to obtain your client's consent for erasure of HDD data**.
Press the "4" key while the menu screen is displayed then the "SKIP ►►I" key to start the HDD R/W Check.
To stop executing the test (OFF) while it is in progress, press the "SKIP I◄◄" key.


HDD R/W CHECK OFF | ON
Caution! This test overwrites all sectors.
Write Error : 0
Read Error : 0
Compare Error : 0
Current LBA : 0
Max LBA : 160086528
Progress : 0 %
Remain Time : ----h --m --s

The display on the left indicates the progress of the test.
The percentage of the test progress is displayed on the screen, and the test is finished when the percentage reaches 100%.

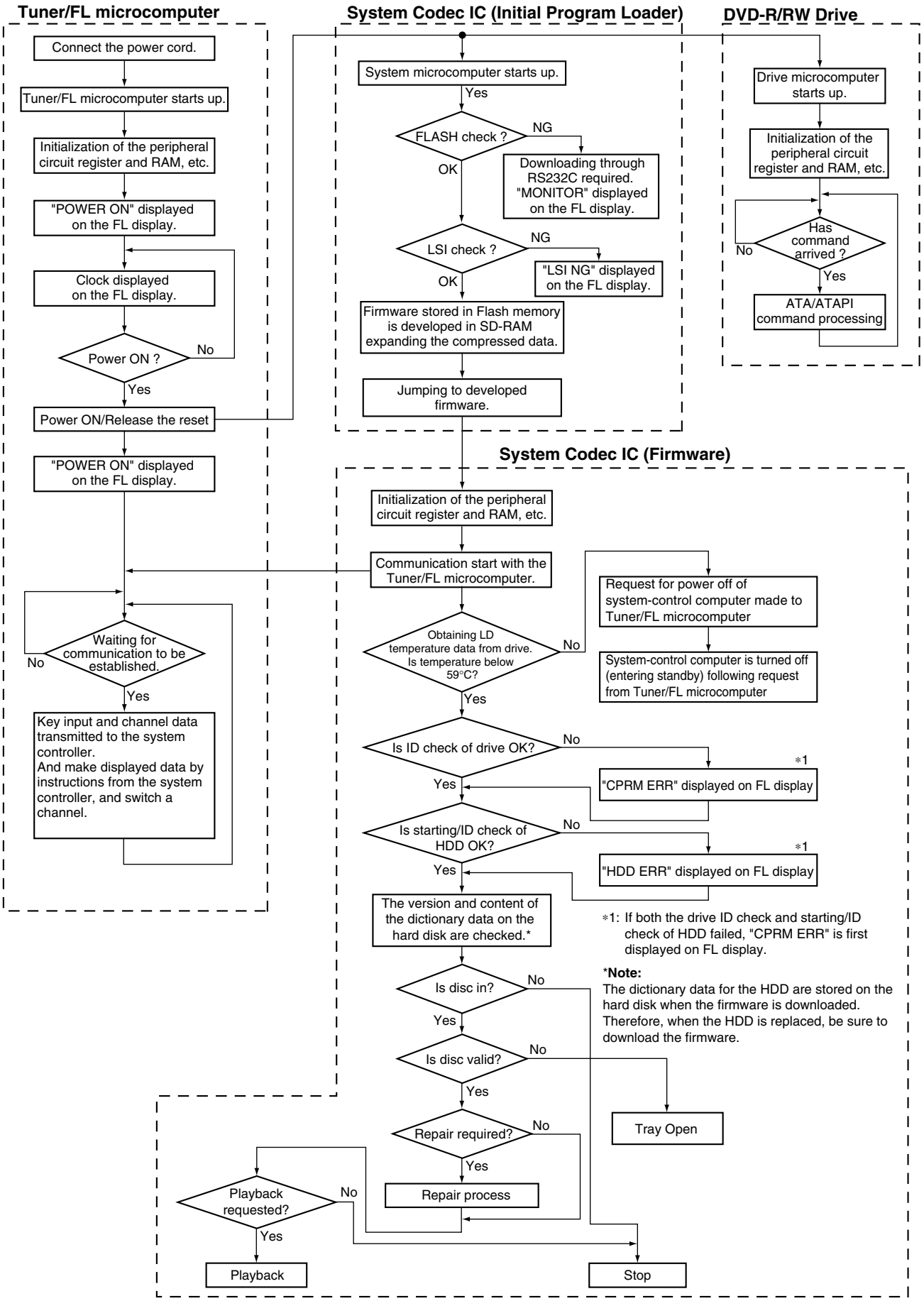

HDD R/W CHECK OFF | ON
Caution! This test overwrites all sectors.
Write Error : 0
Read Error : 0
Compare Error : 0
Current LBA : 17940484
Max LBA : 160086528
Progress : 11 %
Remain Time : 5h 59m 11s

Detailed description on each item on the screen
- Write Error: Number of write errors
- Read Error: Number of read errors
- Compare Error: Number of comparison errors
- Current LBA: The address during testing
- Max LBA: Highest address number of the HDD
- Progress: Percentage of test progress (%)
- Remain Time: Estimated time required for finishing the test across all sectors.
  Estimated time: 11 hours/160 GB

Diagnosis results
- If no error occurs in any of the Write/Read/Compare items, the HDD is in normal condition and is not required to be replaced. A block other than the HDD is in failure.
- If any error occurs, the HDD must be replaced.

To terminate the diagnostic program, press the "ESC" key.

7.1.10 SETUP SEQUENCE


Tuner/FL microcomputer
System Codec IC (Initial Program Loader)
DVD-R/RW Drive
Connect the power cord.
Tuner/FL microcomputer starts up.
Initialization of the peripheral circuit register and RAM, etc.
"POWER ON" displayed on the FL display.
Clock displayed on the FL display.
Power ON ?
No
Yes
Power ON/Release the reset
"POWER ON" displayed on the FL display.
Waiting for communication to be established.
No
Yes
Key input and channel data transmitted to the system controller.
And make displayed data by instructions from the system controller, and switch a channel.
System microcomputer starts up.
Yes
FLASH check ?
NG
OK
Downloading through RS232C required.
"MONITOR" displayed on the FL display.
LSI check ?
NG
OK
"LSI NG" displayed on the FL display.
Firmware stored in Flash memory is developed in SD-RAM expanding the compressed data.
Jumping to developed firmware.
Drive microcomputer starts up.
Initialization of the peripheral circuit register and RAM, etc.
Has command arrived ?
No
Yes
ATA/ATAPI command processing
System Codec IC (Firmware)
Initialization of the peripheral circuit register and RAM, etc.
Communication start with the Tuner/FL microcomputer.
Obtaining LD temperature data from drive. Is temperature below 59°C?
No
Request for power off of system-control computer made to Tuner/FL microcomputer
System-control computer is turned off (entering standby) following request from Tuner/FL microcomputer
Yes
Is ID check of drive OK?
No
*1
"CPRM ERR" displayed on FL display
Yes
Is starting/ID check of HDD OK?
No
*1
"HDD ERR" displayed on FL display
Yes
The version and content of the dictionary data on the hard disk are checked.*
Is disc in?
No
Yes
Is disc valid?
No
Yes
Repair required?
No
Yes
Repair process
Playback requested?
No
Yes
Playback
Tray Open
Stop
*1: If both the drive ID check and starting/ID check of HDD failed, "CPRM ERR" is first displayed on FL display.
*Note:
The dictionary data for the HDD are stored on the hard disk when the firmware is downloaded. Therefore, when the HDD is replaced, be sure to download the firmware.

7.1.11 DISASSEMBLY

Note 1: Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
Note 2: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.
Note 3: For performing the diagnosis shown below, the following jigs for service is required:
- Emergency disc ejection rod (GGF1529)
- Flexible cable for service (GGD1284), (VKP2291), (GGD1437)
- Extension board (GGF1532 (A)), (GGF1532 (B))

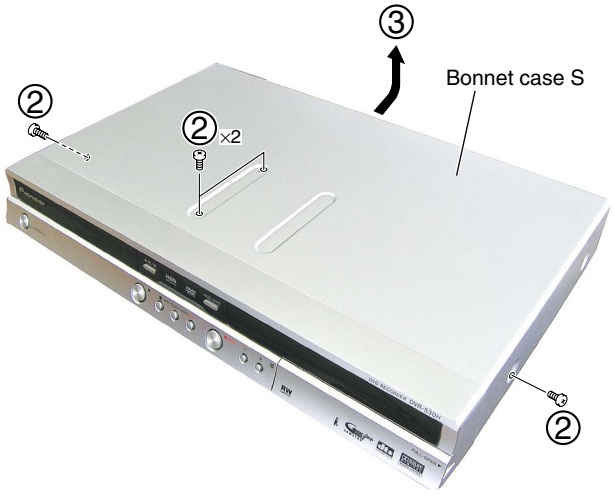
Diagnosis of MAIN Assy

1 Bonnet Case S

① Remove the four screws.

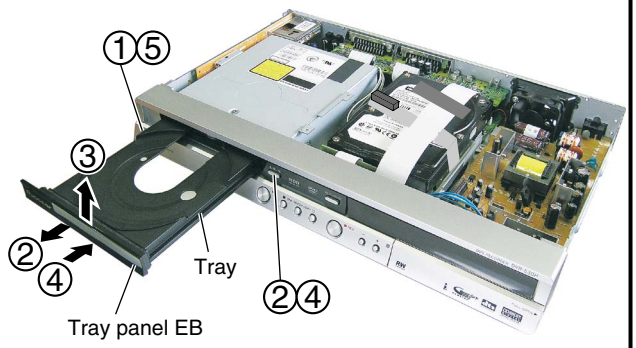
● **Rear view**

② Remove the four screws.
③ Remove the bonnet case S.



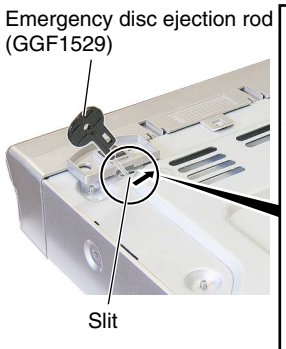
2 Tray Panel EB

① Press the ⏻ STANDBY/ON button to turn on the power.
② Press the ⏏ OPEN/CLOSE button to open the tray.
③ Remove the tray panel EB.
④ Press the ⏏ OPEN/CLOSE button to close the tray.
⑤ Press the ⏻ STANDBY/ON button to turn off the power.

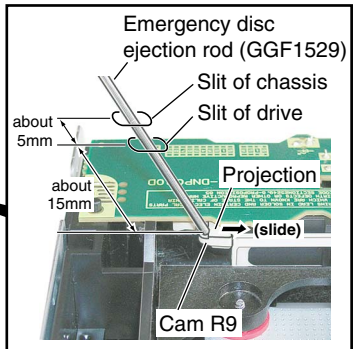


● **How to open the tray when the power cannot be turned on**

When the tray cannot be opened because the power cannot be turned on, it can be opened using the emergency disc ejection rod (GGF1529). (A long, thin rod about 1 mm in diameter can be used in place of the rod.)
Insert the rod through the slit at the bottom of the unit and slide the projection for cam R9 in the direction of the arrow, using the rod. When the tray is popped out a little, pull it out by hand. Find the projection by inserting the rod through the slit by about 20 mm, as the projection is not visible from the outside. If the insertion of the rod exceeds 20 mm, you cannot catch the projection.



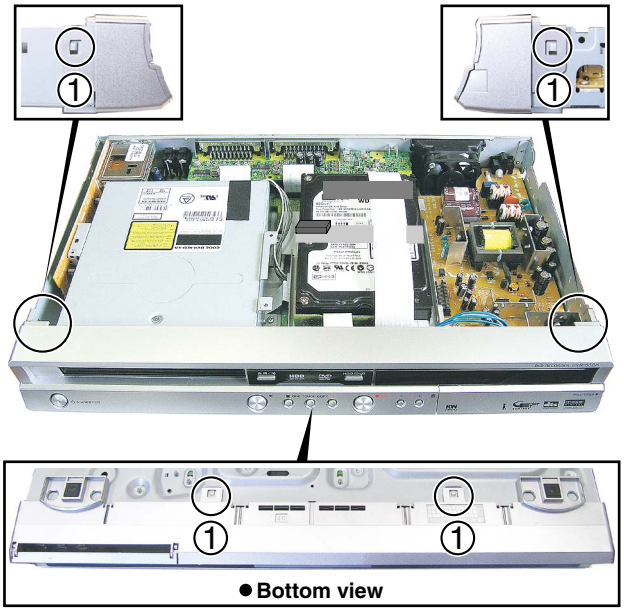
● **Bottom view**



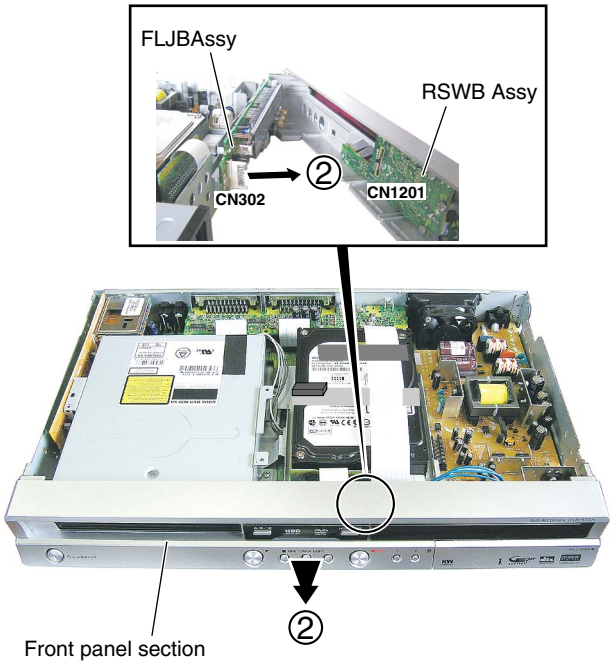
● **Bottom view**

3 Front Panel Section

① Unhook the four hooks.



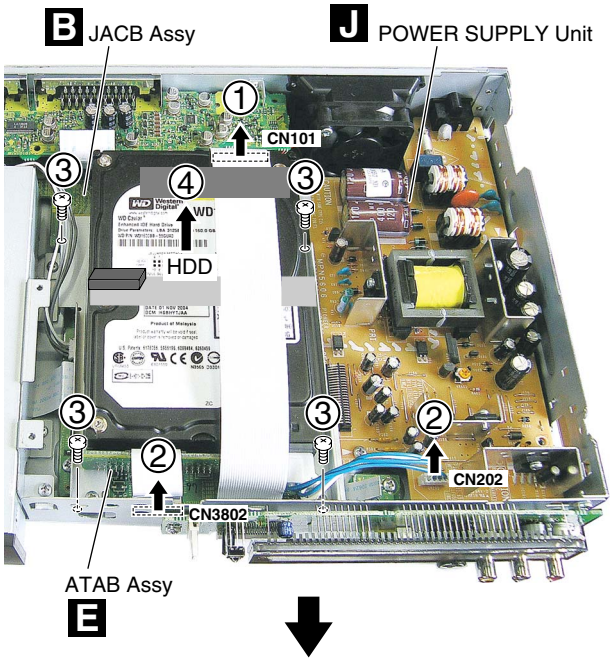
② Remove the front panel section while disconnect the connector.



4 HDD and DRIVE Assy R9R

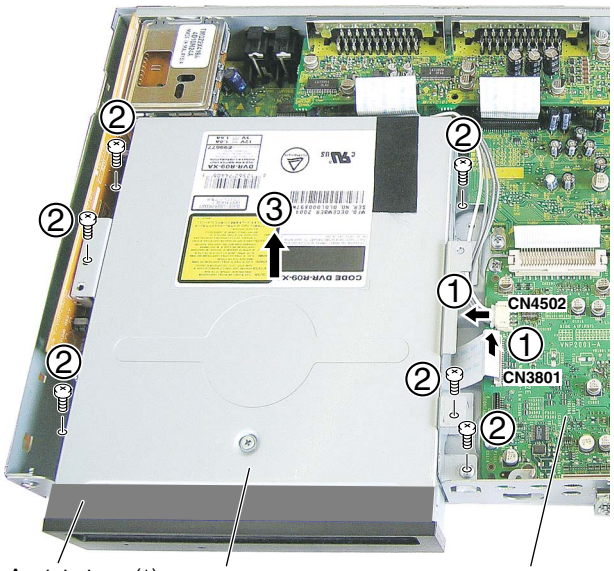
• HDD

① Disconnect the connector.
② Disconnect the flexible cable and connectors.
③ Remove the four screws.
④ Remove the HDD.



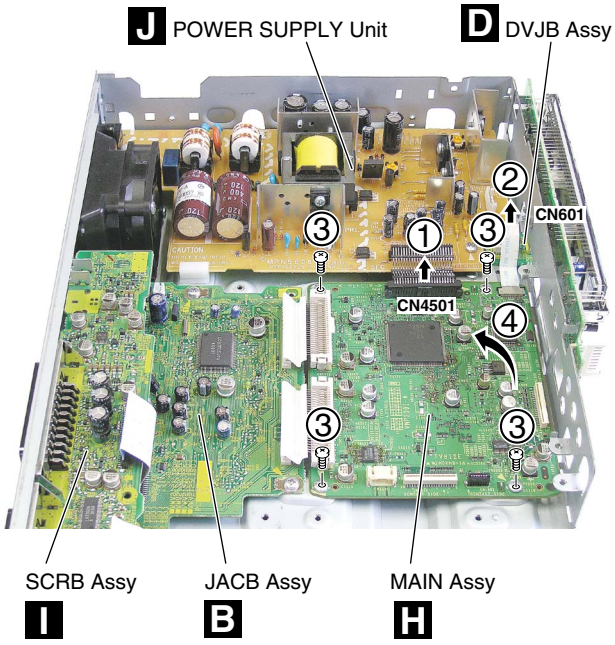
• DRIVE Assy R9R

① Disconnect the flexible cable and connectors.
② Remove the six screws.
③ Remove the DRIVE Assy R9R.



5 MAIN Assy

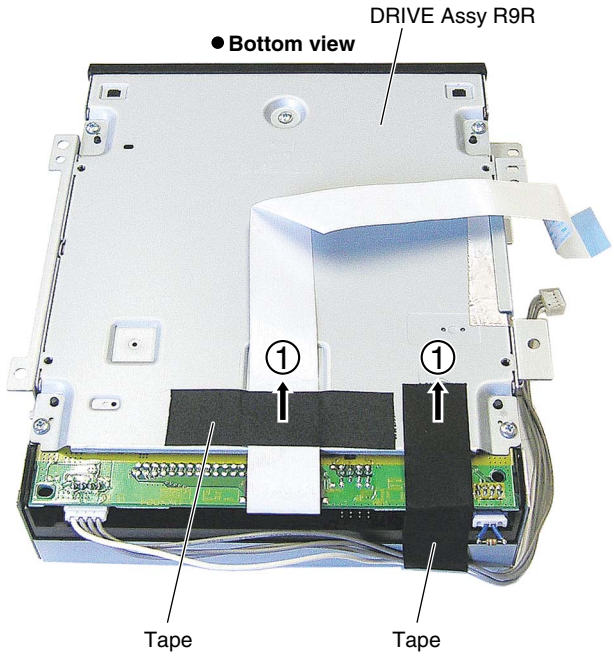
① Disconnect the connector.
② Disconnect the flexible cable.
③ Remove the four screws.
④ Stand the MAIN Assy.



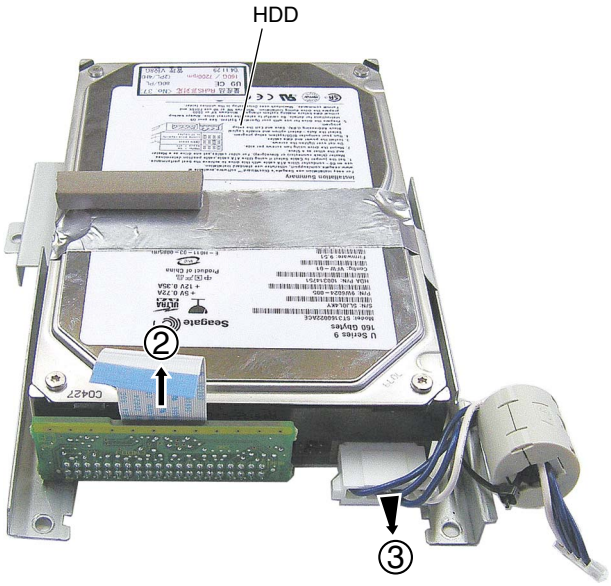
Note:
Acetate tape (*) (former page)
When replacing the DRIVE Assy, remove the acetate tape from the old assy and adhere it to the new assy.
Without the acetate tape, the performance of the drive cannot be assured.
If the tape cannot be reused, be sure to use acetate tape for service (GYH1001).

6 Diagnosis

① Remove the two tapes.



② Disconnect the flexible cable.
③ Disconnect the connector.



④ Reassembling the front panel section.

⑤ Connect the flexible cable.

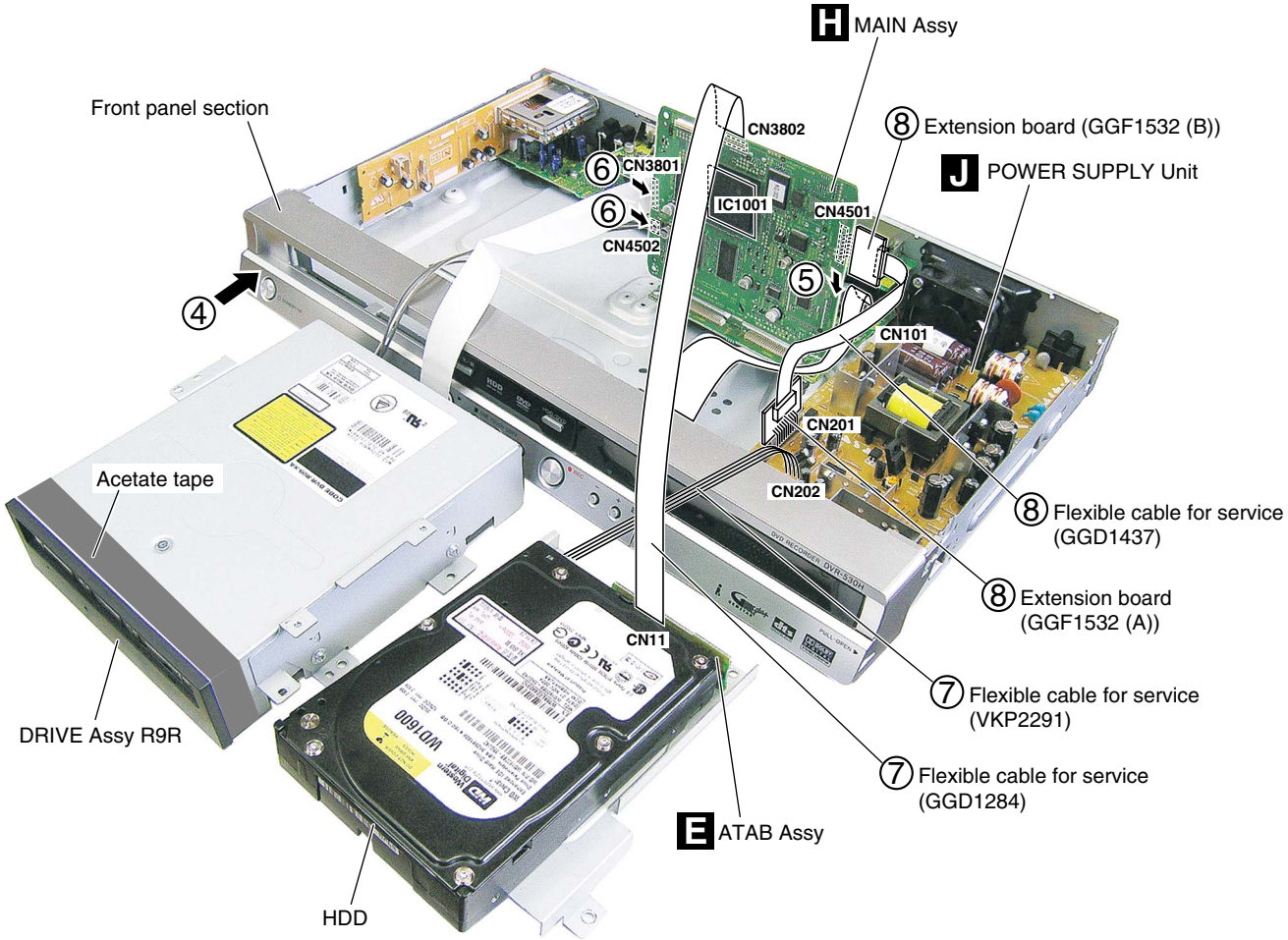
⑥ Connect the connector and flexible cables from the DRIVE Assy R9R.

⑦ Connect the two flexible cables for service from the HDD.

⑧ Connect the two extension boards and flexible cable for service.

⑨ Arrange the unit as shown in the photo below.

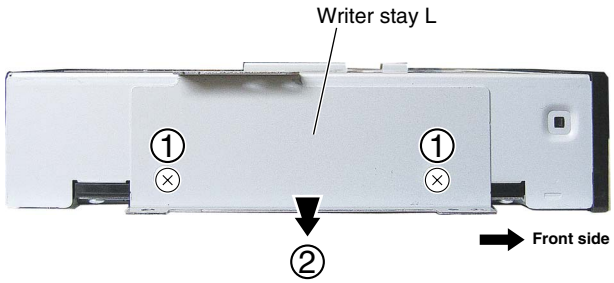
Caution :
Main IC (IC1001) on the MAIN Assy will be heated to arround 80 degrees celsius.
Be careful when works.



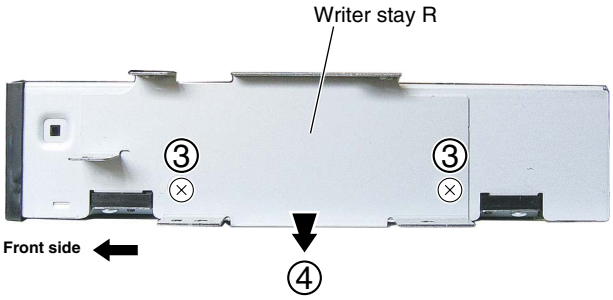
Diagnosis

Cleanning the Pickup Lens

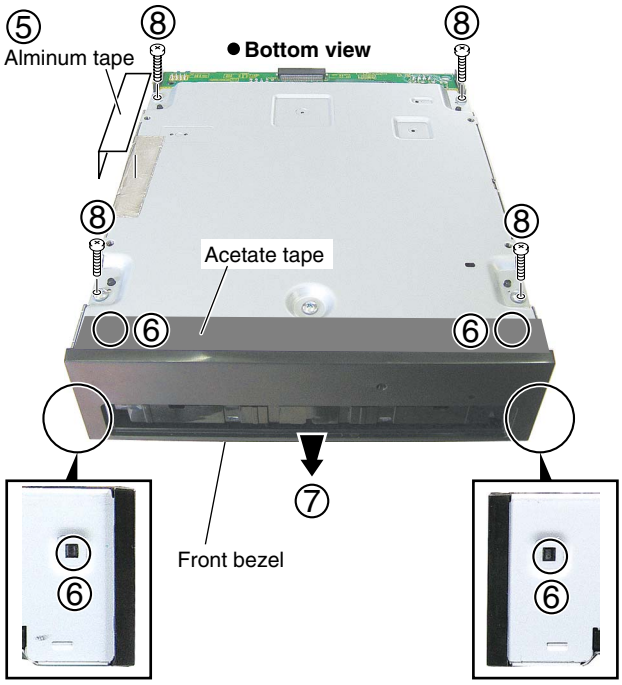
① Remove the two screws.
② Remove the writer stay L.



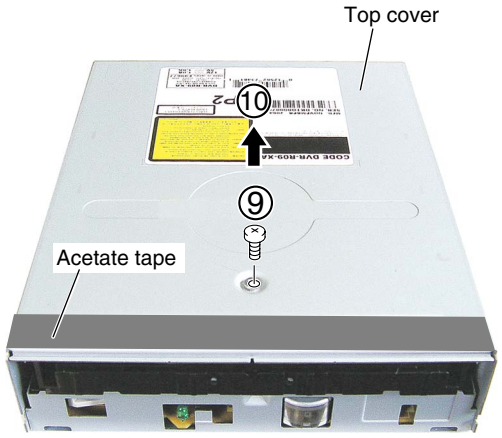
③ Remove the two screws.
④ Remove the writer stay R.



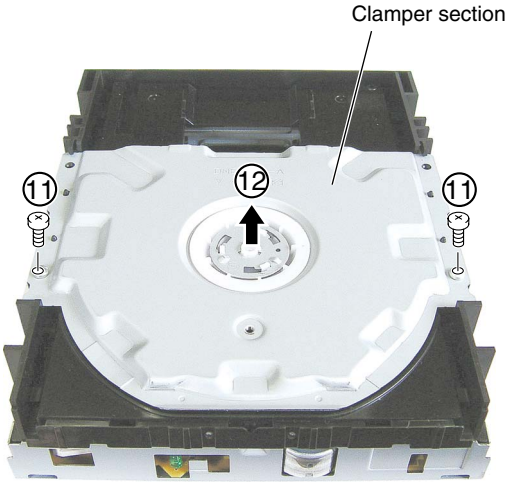
⑤ Remove the alminum tape.
⑥ Unhook the four hooks.
⑦ Remove the front bezel.
⑧ Remove the four screws.



⑨ Remove the one screw.
⑩ Remove the top cover.



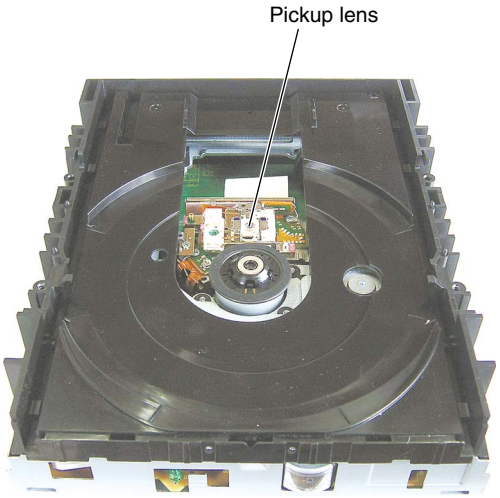
(11) Remove the two screws.
(12) Remove the clamper section.



(13) Clean the pickup lens.

Before shipment, be sure to clean the pickup lens, using the following cleaning materials:

Cleaning liquid : GEM1004
Cleaning paper : GED-008



7.2 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● **List of IC**

PMC002A8, LA73026AV, CM0045AF, R8A34011BG-K, BU4828F, R1170S331B, PQ035ZN01ZPH, NJM2861F33, BA25F18WHFP, BD3823FV, LA73031V

■ PMC002A8 (JCKB ASSY : IC101)

• TUNUER Microcomputer

● **Pin Function**

No.	Pin Name	Signal Name	I/O	Function	Active
1	PA3/S08	FLDATA	O	Communication line with FL Driver	
2	PA4/SI8/SB8	FLSTB	O	Ccommunication strobe line with FL Driver	
3	PA5/SCK8	FLCLK	O	Communication clock with FL Driver	
4	P70/INTO/TOCLP	WDT	I	WDT for detection of u-com in the state of out of control	
5	P71/INT1/TOHCP	ACDET	I	Detection of AC power	
6	P72/INT2/TOIN/TOLCP	HS_MTMOT	I	Handshaking of system control u-com communication	
7	P73/INT3/TOIN/TOHCP	IR	I	Pulse input of remote control	
8	RES#	XRESET	I	Reset input	
9	XT1	XT1	I	Connection of sub clock	
10	XT2	XT2	O	Connection of sub clock	
11	VSS1	GND	–		
12	CF1	CF1	I	Connection of main clock	
13	CF2	CF2	O	Connection of main clock	
14	VDD1	VDD1	–		
15	P80/AN0	MODEL1	Analog In	Input #1 for model type judgement	
16	P81/AN1	MODEL2	Analog In	Input #1 for model type judgement	
17	P82/AN2	KEY1	Analog In	Main unit key input #1	
18	P83/AN3	KEY2	Analog In	Main unit key input #2	
19	P84/AN4	KEY3	Analog In	Main unit key input #3	
20	P85/AN5	AGC	Analog In	AGC voltage input from tuner	
21	P86/AN6	BATTERY	Analog In	Input for battery voltage checking	
22	P87/AN7	FUNC	Analog In		
23	P10/SO0	SDET3	I	Detection of S tereminal #3 connection	
24	P11/SI0/SB0	SDET2	I	Detection of S tereminal #2 connection	
25	P12/SCK0	SDET1	I	Detection of S tereminal #1 connection	
26	P13/SO1	AVLOUT	O	Input for battery voltage checking	
27	P14/SI1/SB1	SDA	Nch O/D	I2C communication (data)	
28	P15/SCK1	SCL	Nch O/D	I2C communication (clock)	
29	P16/T1PWML	XSYSRST	O	IC reset signal of whole system	
30	P17/T1PWMH/BUZ	XVDECRST	O	Reset signal to VDEC2	
31	PE0/AN12	MUTEV	O	CVBS, Y/C mute signal for video driver IC	
32	PE1/AN13	COMPMUTE	O	Y/Cb/Cr mute signal for video driver IC	
33	PE2/AN14	AMUTE1	O	Audio mute signal of ouput stage	
34	PE3/AN15	INSEL1	O	Input selection of video selector	
35	PE4	INSEL2	O	Input selection of video selector	
36	PE5	INSEL3	O	Input selection of video selector	
37	PE6	YCSEL	O	CVBS or Y/C selection of video selector	
38	PE7	STBYVS	O	Standby mode selection of video selector	
39	VSS4	GND	–		
40	VDD4	VDD4	–		

No.	Pin Name	Signal Name	I/O	Function	Active
41	PF0	LET	O	Letter-box output superimposed signal	
42	PF1	SQU	O	Squeese output superimposed signal	
43	PF2	RGBSEL	O	Input RGB selection	
44	PF3	XTUMODE	O		
45	PF4	S1	O	S1/S2 selection signal	
46	PF5	XLPTHRU	O		
47	PF6	PSMUTE	O		
48	PF7	XAVLTH	O	Through selection of AV.Link communication line	
49	SI2P0/SO2	NC	O		
50	SI2P1/SI2/SB2	NC	O		
51	SI2P2/SCK2	NC	O		
52	SI2P3/SCK2O	RFTHRU	O	RF through selection of tuner	
53	PWM1	NC	O		
54	PWM0	FANCTRL	O	Rotaion speed control of radiating fan	
55	VDD2	VDD2	–		
56	VSS2	GND	–		
57	PO0	P_CONT2	O		
58	PO1	MUTECTL	O		
59	PO2	EPGEXT	O	Equaliser selection of slicer input video	
60	PO3	TUON	O	Power control for tuner section	
61	PO4	SWVION	O	Power control for tvideo section	
62	PO5/CKO	P_CONT	O	Power control for whole system	
63	PO6/T6O	FLON	O	Power control for FL tube	
64	PO7/T7O	XP_SAVE	O		
65	P20/INT4/T1IN/TOCLP/TOHCP/INT6	STATCHG	I	Detection of audio multi-plex status change of MSP	
66	P21/INT4/T1IN/TOCLP/TOHCP	J_CLOCK	I	Input audio for Just Clock	
67	P22/INT4/T1IN/TOCLP/TOHCP/HCTR	CSYNCIN	I	C-sync for Auto-Rec	
68	P23/INT4/T1IN/TOCLP/TOHCP	XCHECKER	I	Detection of attaching the unit checker	
69	P24/INT5/T1IN/TOCLP/TOHCP/INT7	MRST	I	Detection of abnormality of Main Board power	
70	P25/INT5/T1IN/TOCLP/TOHCP	AVLIN	I	Input line of NexTViewLink	
71	P26/INT5/T1IN/TOCLP/TOHCP	NC	O		
72	P27/INT5/T1IN/TOCLP/TOHCP	BLANKIN	I		
73	P30/PWM4	LEDDVD	O	DVD indicator	
74	P31/PWM5	LEDHDD	O	HDD indicator	
75	P32/UTX1	TXD1	O	Transmission for RS232-C terminal	
76	P33/URX1	RXD1	I	Reception for RS232-C terminal	
77	P34/UTX2	TXD2	O	Reservation	
78	P35/URX2	RXD2	I	Reservation	
79	P36	HS_TTOM	O	Handshaking of sys con SYS → Tuner	
80	VDDODA	VDDODA	–		

No.	Pin Name	Signal Name	I/O	Function	Active
81	PB6/CVD/CSYNC	CVBSIN	I	Input video for data slicer	
82	VSSVCO	GND	–		
83	PB4/FILTSLC	FILTSLC	I	External filter for slicer PLL	
84	VDDVCO	VDDVCO	–		
85	PB2	NC	O		
86	PB1	NC	O		
87	PB0/DS1FLD	NC	O		
88	VSS3	GND	–		
89	VDD3	VDD3	–		
90	PC7/DBGP2	DBGP2	Nch O/D	Control port for on-chip debugger	
91	PC6/DBGP1	DBGP1	Nch O/D	Control port for on-chip debugger	
92	PC5/DBGP0	DBGP0	Nch O/D	Control port for on-chip debugger	
93	PC4/AN10	NC	O		
94	PC3/AN11	NC	O		
95	PC2/AN9	NC	O		
96	PC1/AN8	NC	O		
97	PC0/OCSYNC	NC	O		
98	PA0/SO7	SD_TTOM	O	Communication data line of sys con Tuner → Sys	
99	PA1/SI7/SB7	SD_MTOT	I	Communication data line of sys con Sys → Tuner	
100	PA2/SCK7	SCK_MTOT	I	Communication clock of sys con Sys → Tuner	

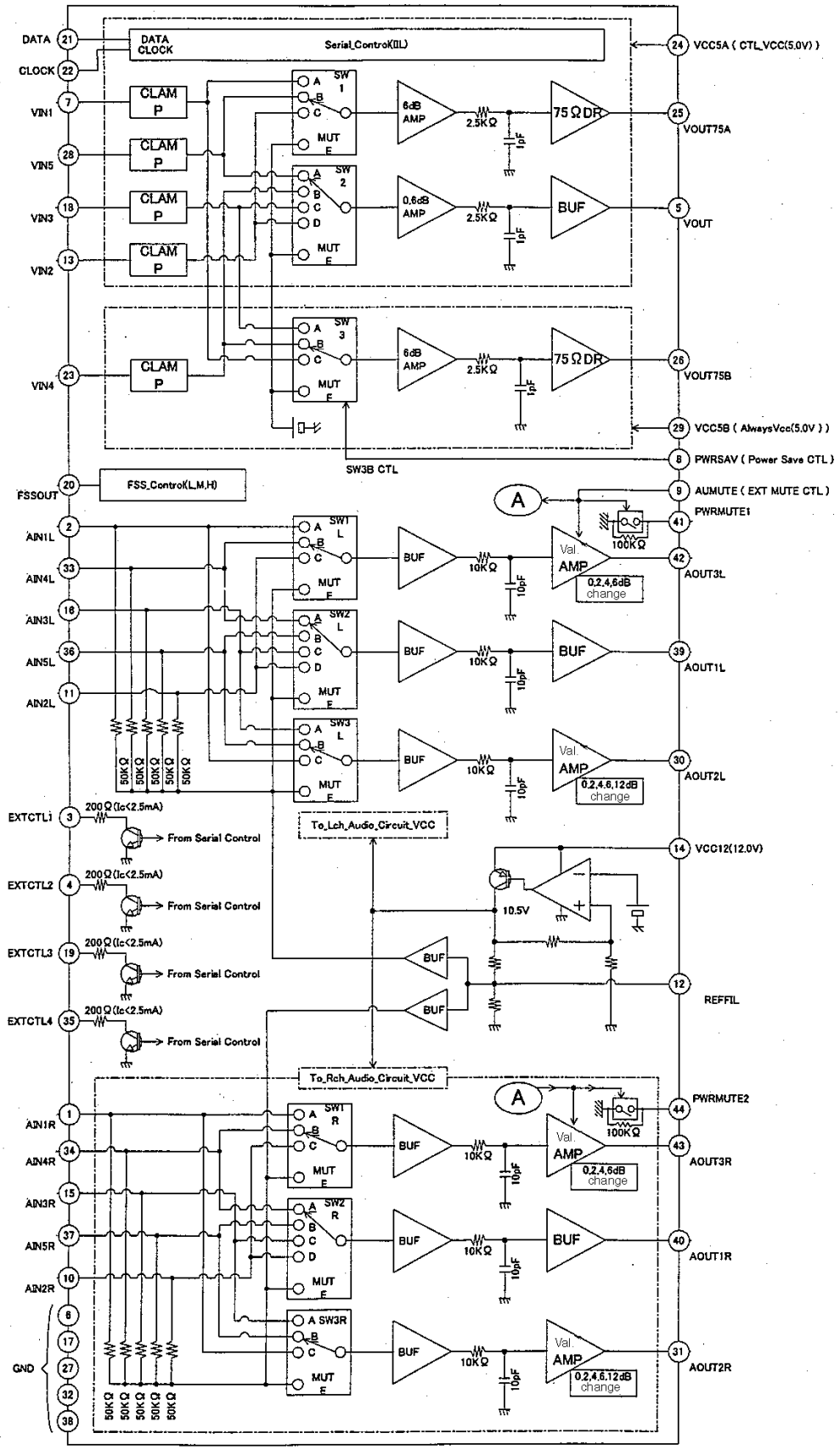
■ LA73026AV (SCRB ASSY : IC801)

• Dual SCART Interface IC

● Pin Function

No.	Pin Name	DC Voltage	Function
1 2 10 11 15 16 33 34 36 37	AIN1R AIN1L AIN2R AIN2L AIN3R AIN3L AIN4L AIN4R AIN5L AIN5R	5.58V	Audio input terminal
3 4 19 35	EXTCTL1 EXTCTL2 EXTCTL3 EXTCTL4	2.5mA, ON →0.75V OFF →OPEN	General purpose output Opencollector
5	VOUT	1.10V	Video output terminal Push-pull output/Low-impedance
6 17 27 32 38	GND GND EXT-75ΩDR-GND DEC-75Ω-GND GND	0V	
7 13 18 23 28	VIN1 VIN2 VIN3 VIN4 VIN5	1.8V	Video input terminal Sync-tip clamp Input/Hi-impedance
8	PWRSAV	0.2V	Power save mode select pin OPEN : L
9	AUMUTE	0.05V	Control terminal for audio mute OPEN : L
12	REFFIL	4.94V	Terminal for Ref_DC ripple removing
14	VCC12		Vcc for audio
20	FSSOUT	H : Vcc-0.5V M : 6V L : 0V	FSS control terminal Output H, M, L 3 values with serial control
21	DATA		Confirmed to IIC BUS. Data input terminal
22	CLOCK		Confirmed to IIC BUS. Clock input terminal
24	VCC5A		Control Vcc for Video
25 26	VOUT75A VOUT75B	1.10V	Video driver output terminal Push-pull output/Low-impedance
29	VCC5B		Always VCC for Video
30 31 42 43	AOUT2L AOUT2R AOUT3L AOUT3R	4.91V	Audio output terminal Push-pull output/Low-impedance
39 40	AOUT1L AOUT1R	4.91V	Audio output terminal Push-pull output/Low-impedance
41 44	PWRMUTE1 PWRMUTE2	0V	Output terminal of audio muting

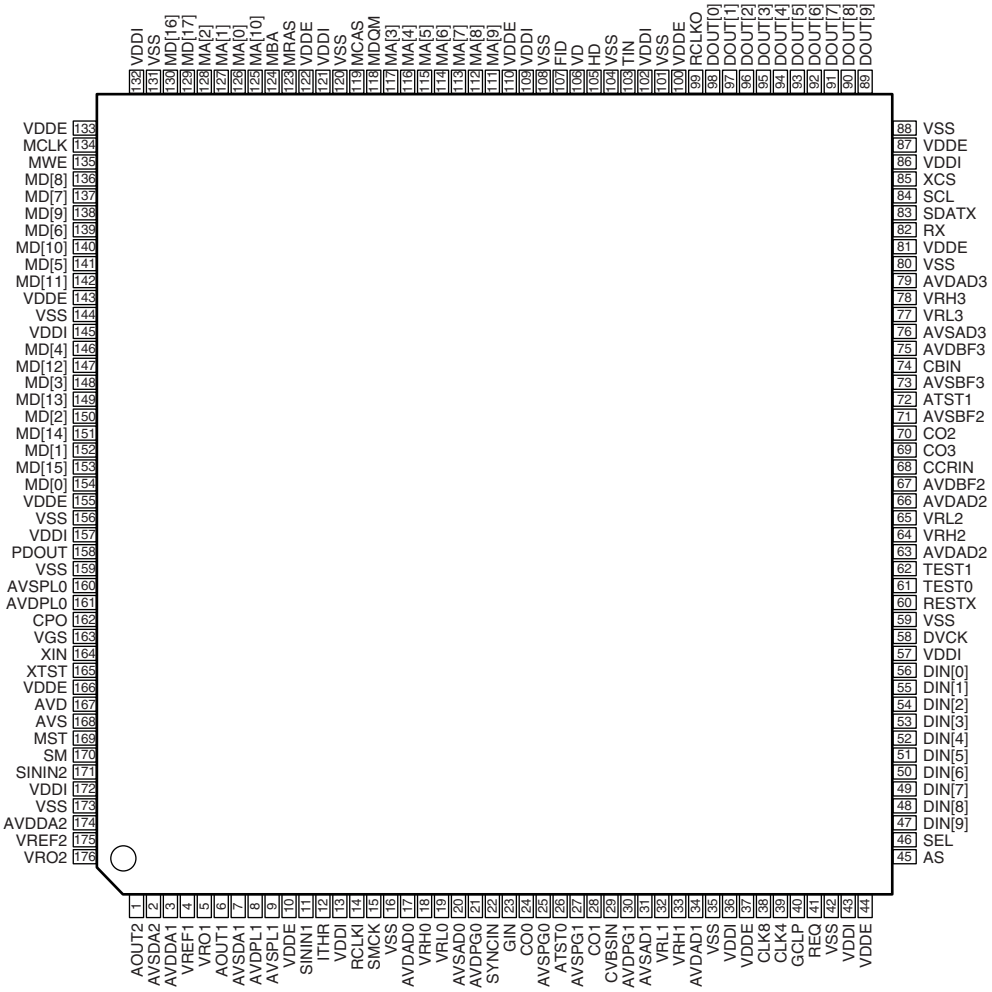
● Block Diagram



CM0045AF (MAIN ASSY: IC4201)

• Video Decoder

● Pin Arrangement (Top view)



● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	AOUT2	O	DAC2 analog signal output	9	AVSPL1	P	PLL1 GND
2	AVSDA2	P	DAC2 GND	10	VDDE	P	I/O power supply 1
3	AVDDA1	P	DAC1 power supply	11	SININ1	I	PLL1 reference input
4	VREF1	I	DAC1 reference voltage input	12	ITHR	I	Penetration current test pin
5	VRO1	O	DAC1 inward current setting pin	13	VDDI	P	CORE power supply 1
6	AOUT1	O	DAC1 analog signal output	14	RCLKI	I	Resampling clock input
7	AVSDA1	P	DAC1 GND	15	SMCK	I	SCAN test pin
8	AVDPL1	P	PLL1 power supply	16	VSS	P	Digital GND 1

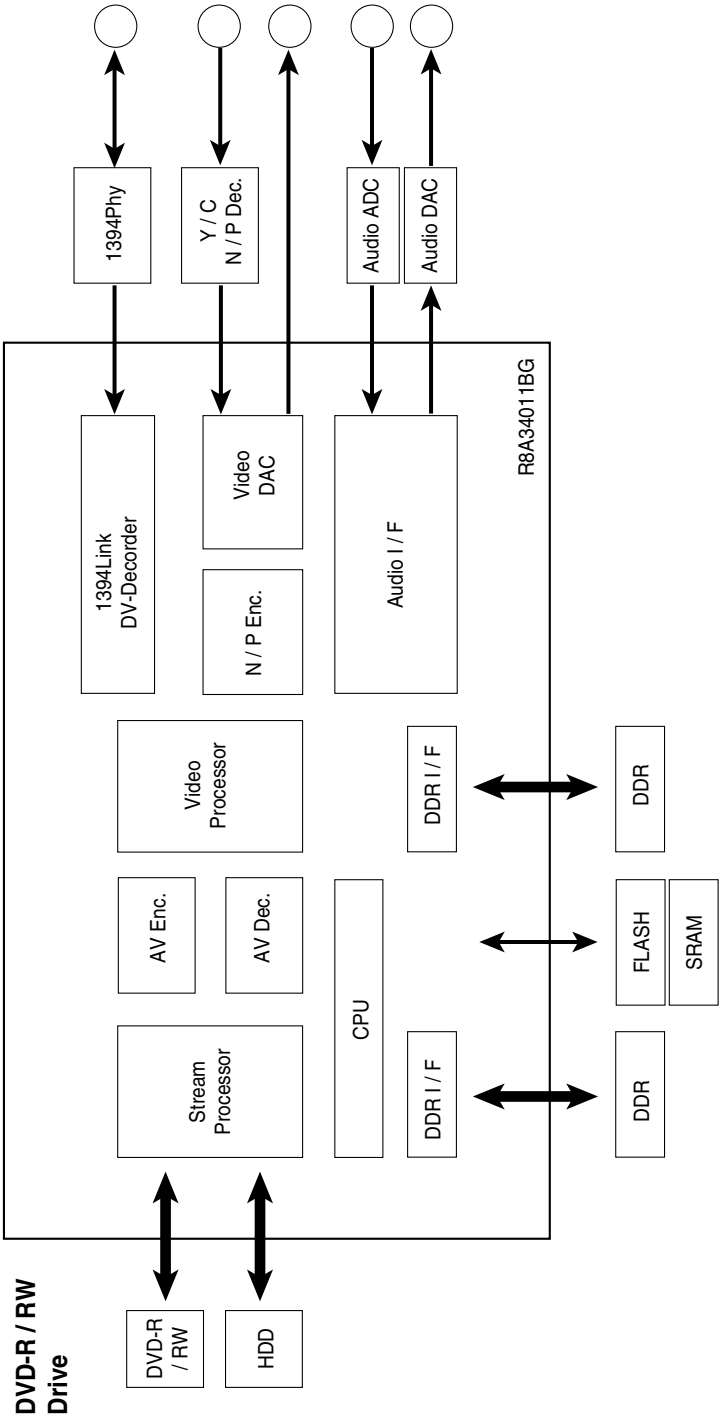
No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
17	AVDAD0	P	ADC0 power supply	57	VDDI	P	CORE power supply 4
18	VRH0	I	ADC0 top reference electric potential	58	DVCK	I	DVIF clock input
19	VRL0	I	ADC0 bottom reference electric potential	59	VSS	P	Digital GND4
20	AVSAD0	P	ADC0 GND	60	RESETX	I	System reset input
21	AVDPG0	P	PGA0, CLP0, OFFC power supply	61	TEST0	I	Test mode setting 0
22	SYNCIN	I	ADC0 analog input	62	TEST1	I	Test mode setting 1
23	GIN	I	ADC0 analog input	63	AVDAD2	P	ADC2 power supply
24	CO0	O	PGA0 capacitor connection pin (REF0-synctip)	64	VRH2	I	ADC2 top reference electric potential
25	AVSPG0	P	PGA0, CLP0, OFFC GND	65	VRL2	I	ADC2 bottom reference electric potential
26	ATST0	I	Analog test pin	66	AVSAD2	P	ADC2 GND
27	AVSPG1	P	PGA1, CLP1, OFFC GND	67	AVDBF2	P	BUF2.CLP2 power supply
28	CO1	O	PGA1 capacitor connection pin (REF1-synctip)	68	CCRIN	I	ADC2 analog input
29	CVBSIN	I	ADC1 analog input	69	CO3	O	PGA3 capacitor connection pin
30	AVDPG1	P	PGA1, CLP1, OFFC power supply	70	CO2	O	BUF2 capacitor connection pin
31	AVSAD1	P	ADC1 GND	71	AVSBF2	P	BUF2, CLP2 GND
32	VRL1	I	ADC1 bottom reference electric potential	72	ATST1	I	Analog test pin
33	VRH1	I	ADC1 top reference electric potential	73	AVSBF3	P	BUF3, BUFF GND
34	AVDAD1	P	ADC1 power supply	74	CBIN	I	ADC3 analog input
35	VSS	P	Digital GND2	75	AVDBF3	P	BUF3.BUFF power supply
36	VDDI	P	CORE power supply 2	76	AVSAD3	P	ADC3 GND
37	VDDE	P	I/O power supply 2	77	VRL3	I	ADC3 bottom reference electric potential
38	CLK8	O	8fsc clock output for GCR	78	VRH3	I	ADC3 top reference electric potential
39	CLK4	O	4fsc clock output for GCR	79	AVDAD3	P	ADC3 power supply
40	GCLP	I/O	Clamp pulse output for GCR/FB input	80	VSS	P	Digital GND5
41	REQ	O	Interrupt signal output	81	VDDE	P	I/O power supply 4
42	VSS	P	Digital GND3	82	RX	O	--
43	VDDI	P	CORE power supply 3	83	SDATX	I/O	Data for serial communication (I2C: SDA)
44	VDDE	P	I/O power supply 3	84	SCL	I	Clock for serial communication (I2C: SCL)
45	AS	I	Address select input	85	XCS	I	--
46	SEL	I	Serial communication mode setting	86	VDDI	P	CORE power supply 5
47	DIN[9]	I	Digital data input (MSB)	87	VDDE	P	I/O power supply 5
48	DIN[8]	I	Digital data input	88	VSS	P	Digital GND6
49	DIN[7]	I	Digital data input	89	DOUT[9]	O	Digital data output (MSB)
50	DIN[6]	I	Digital data input	90	DOUT[8]	O	Digital data output
51	DIN[5]	I	Digital data input	91	DOUT[7]	O	Digital data output
52	DIN[4]	I	Digital data input	92	DOUT[6]	O	Digital data output
53	DIN[3]	I	Digital data input	93	DOUT[5]	O	Digital data output
54	DIN[2]	I	Digital data input	94	DOUT[4]	O	Digital data output
55	DIN[1]	I	Digital data input	95	DOUT[3]	O	Digital data output
56	DIN[0]	I	Digital data input (LSB)	96	DOUT[2]	O	Digital data output

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
97	DOUT[1]	O	Digital data output	137	MD[7]	I/O	SDRAM data bus
98	DOUT[0]	O	Digital data output (LSB)	138	MD[9]	I/O	SDRAM data bus
99	RCLKO	O	Resampling clock output	139	MD[6]	I/O	SDRAM data bus
100	VDDE	P	I/O power supply 6	140	MD[10]	I/O	SDRAM data bus
101	VSS	P	Digital GND7	141	MD[5]	I/O	SDRAM data bus
102	VDDI	P	CORE power supply 6	142	MD[11]	I/O	SDRAM data bus
103	TIN	I	Control input of data output timing	143	VDDE	P	I/O power supply 10
104	VSS	P	Digital GND8	144	VSS	P	Digital GND12
105	HD	O	H drive output	145	VDDI	P	CORE power supply 10
106	VD	I/O	V drive output (MD[19])	146	MD[4]	I/O	SDRAM data bus
107	FID	I/O	Field ID output (MD[18])	147	MD[12]	I/O	SDRAM data bus
108	VSS	P	Digital GND9	148	MD[3]	I/O	SDRAM data bus
109	VDDI	P	CORE power supply 7	149	MD[13]	I/O	SDRAM data bus
110	VDDE	P	I/O power supply 7	150	MD[2]	I/O	SDRAM data bus
111	MA[9]	O	SDRAM address output	151	MD[14]	I/O	SDRAM data bus
112	MA[8]	O	SDRAM address output	152	MD[1]	I/O	SDRAM data bus
113	MA[7]	O	SDRAM address output	153	MD[15]	I/O	SDRAM data bus (MSB)
114	MA[6]	O	SDRAM address output	154	MD[0]	I/O	SDRAM data bus (LSB)
115	MA[5]	O	SDRAM address output	155	VDDE	P	I/O power supply 11
116	MA[4]	O	SDRAM address output	156	VSS	P	Digital GND13
117	MA[3]	O	SDRAM address output	157	VDDI	P	CORE power supply 11
118	MDQM	O	SDRAM DQM output	158	PDOUT	O	Phase comparison output
119	MCAS	O	SDRAM CAS output	159	VSS	P	Digital GND14
120	VSS	P	Digital GND10	160	AVSPL0	P	PLL0 GND
121	VDDI	P	CORE power supply 8	161	AVDPL0	P	PLL0 power supply
122	VDDE	P	I/O power supply 8	162	CPO	O	PLL0 Charge Pump output
123	MRAS	O	SDRAM RAS output	163	VGS	I	GND for PLL0 guard band
124	MBA	O	SDRAM bank address output	164	XIN	I	27MHz clock input
125	MA[10]	O	SDRAM address output (MSB)	165	XTST	I	SCAN test pin
126	MA[0]	O	SDRAM address output (LSB)	166	VDDE	P	I/O power supply 12
127	MA[1]	O	SDRAM address output	167	AVD	P	PLL2 power supply
128	MA[2]	O	SDRAM address output	168	AVS	P	PLL2 GND
129	MD[17]	I/O	(SDRAM data bus)	169	MST	I	SCAN test pin
130	MD[16]	I/O	(SDRAM data bus)	170	SM	I	SCAN test pin
131	VSS	P	Digital GND11	171	SININ2	I	PLL2 reference input
132	VDDI	P	CORE power supply 9	172	VDDI	P	CORE power supply 12
133	VDDE	P	I/O power supply 9	173	VSS	P	Digital GND15
134	MCLK	O	SDRAM clock output	174	AVDDA2	P	DAC2 power supply
135	MWE	O	SDRAM WE output	175	VREF2	I	DAC2 reference voltage input
136	MD[8]	I/O	SDRAM data bus	176	VRO2	O	DAC2 inward current setting pin

■ R8A34011BG-K (MAIN ASSY : IC1001)

• System Codec

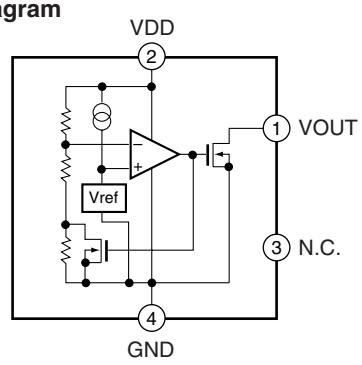
● Block Diagram



■ BU4828F (MAIN ASSY : IC3706)

• Reset IC

● **Block Diagram**



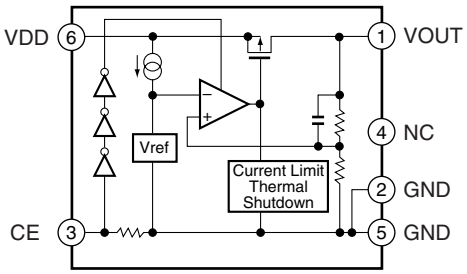
● **Pin Discription**

No.	Pin Name	I/O	Function
1	VOUT	O	Output Pin
2	VDD	I	Power Supply Input pin
3	N.C.	–	N.C.
4	GND	–	GND pin

■ R1170S331B (MAIN ASSY : IC4506)

• Regulator IC

● **Block Diagram**



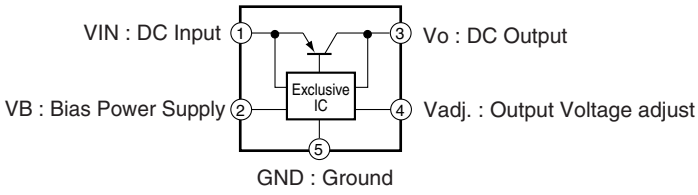
● **Pin Discription**

No.	Pin Name	I/O	Function
1	VOUT	O	VR Output Pin
2	GND	–	GND pin
3	CE.	O	Cjip Enable ("H" active)
4	N.C.	–	N.C.
5	GND	–	GND pin
6	VDD	I	Power Supply Input pin

■ PQ035ZN01ZPH (MAIN ASSY : IC4509)

• Regulator IC

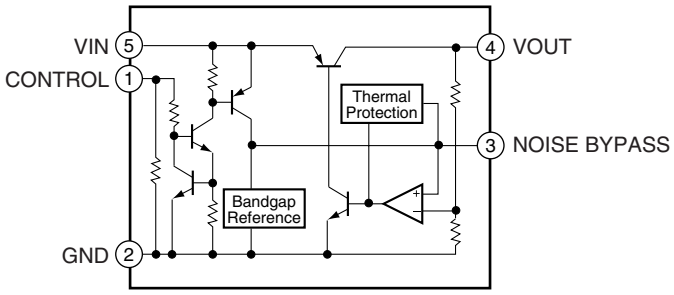
● **Block Diagram**



■ NJM2861F33 (MAIN ASSY : IC4512)

• Regulator IC

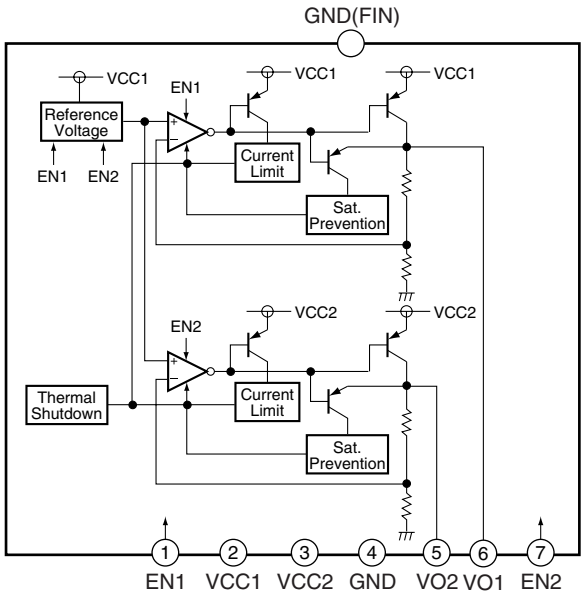
● **Block Diagram**



■ BA25F18WHFP (MAIN ASSY : IC4571)

• Dual Low-Dropout Voltage Regulator

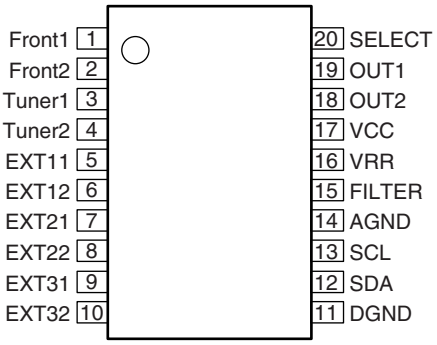
● **Block Diagram**



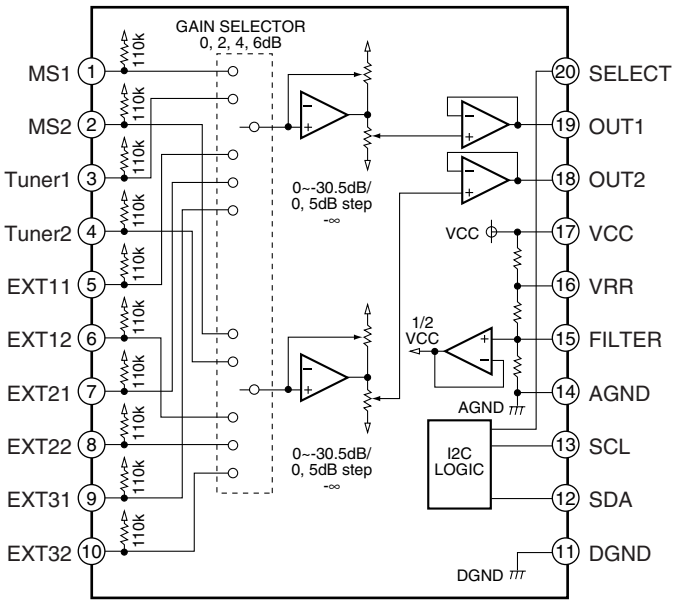
■ BD3823FV (JACB ASSY : IC103)

• Audio Sound Processor

● Pin Layout (Upper view)



● Block Diagram



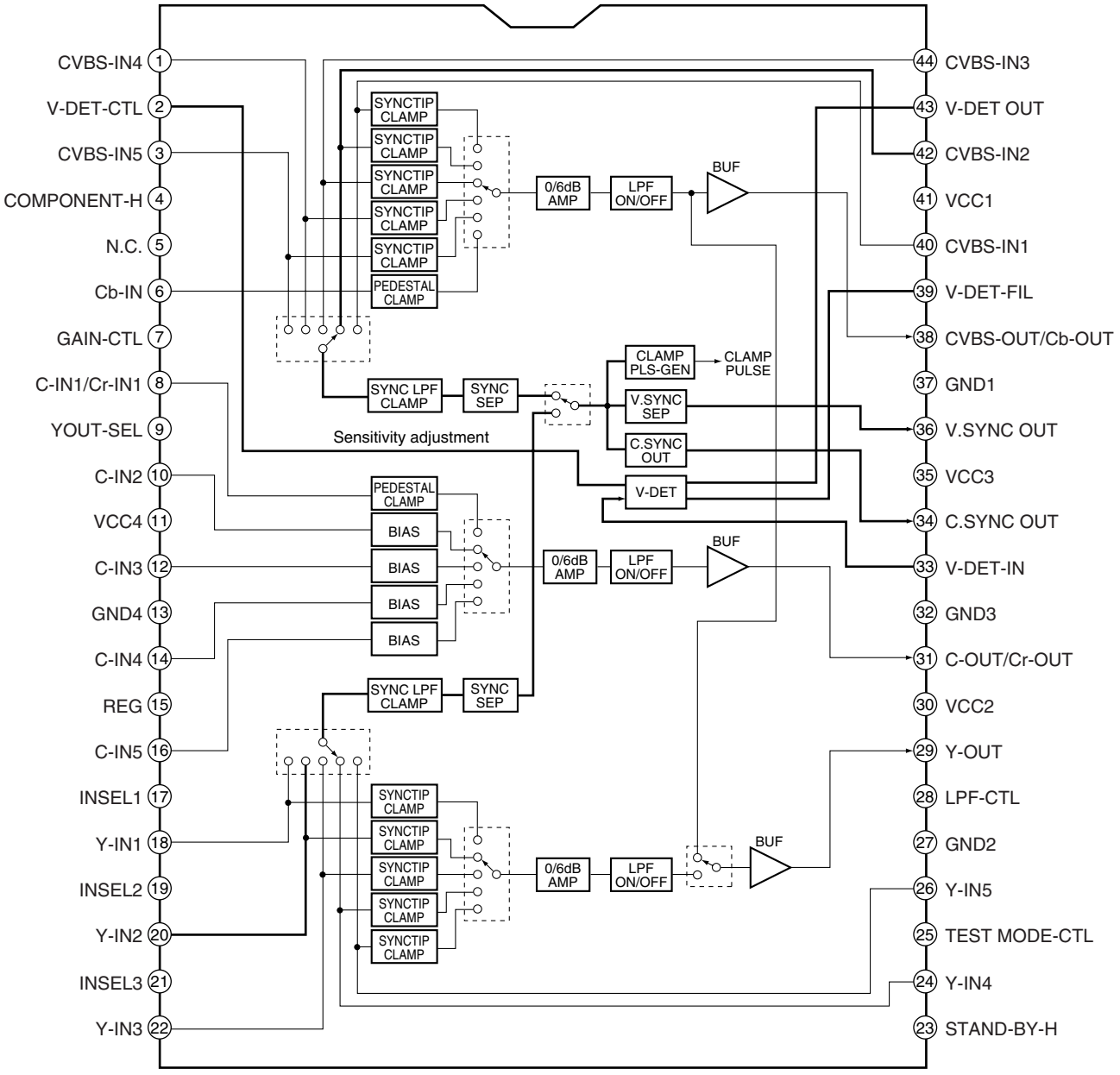
● Pin Discription

No.	Pin Name	I/O	Function
1	MS1	I	Music server input terminal
2	MS2	I	Music server input terminal
3	Tuner1	I	Tuner input terminal of ch1
4	Tuner2	I	Tuner input terminal of ch2
5	EXT11	I	External 1 input terminal of ch1
6	EXT12	I	External 1 input terminal of ch2
7	EXT21	I	External 2 input terminal of ch1
8	EXT22	I	External 2 input terminal of ch2
9	EXT31	I	External 3 input terminal of ch1
10	EXT32	I	External 3 input terminal of ch2
11	DGND	–	Ground terminal
12	SDA	I	I2C BUS data terminal
13	SCL	I	I2C BUS clock terminal
14	AGND	–	GND terminal
15	FILTER	I	1/2 VCC terminal
16	VRR	I	Ripple rejection filter terminal
17	VCC	–	Power supply terminal
18	OUT2	O	Volume output terminal of ch2
19	OUT1	O	Volume output terminal of ch1
20	SELECT	I	Slave address selection terminal

■ LA73031V (JACB ASSY : IC401)

• Video Input selector

● Block Diagram



The parts connected by wide lines operate even at standby mode.

7.3 CAUTIONS ON HANDLING THE HDD

(1) Cautions on Handling the HDD

- The HDD is very sensitive to shocks and vibrations. Care must be taken especially during operation (when the power is on).
- The HDD is very sensitive to electrostatic charges.
- Rapid change in temperature or humidity may cause deterioration of the HDD.

Note: After receiving damage caused by any above-mentioned factors, the HDD may operate normally for dozens or some hundreds of hours but then suddenly crash. If you are certain you have damaged a new repair part (HDD) while making repairs, do not use the part.

The HDD is about 10 times as sensitive to shock during operation than during nonoperation.

Reference: Main specifications on damage to the HDD

	During operation	During nonoperation
Shock G (acceleration)	<approx. 20 G	<approx. 200 G
Temperature change	< 15°C/hour	
Moisture change	< 20%/hour	

Reference: Estimate value of falling distance vs. shock (G) when the HDD is dropped without protection

Falling distance \ Landing surface	Granite surface	Concrete floor	Synthetic-resin-coated table	Antistatic sponge
0.5 inch / 12.7 mm	387	217	200	26
1.0 inch / 25.4 mm	595	457	310	37
2.0 inch / 50.8 mm	1133	600	680	70
4.0 inch / 101.6 mm	1795	1040	1050	267

(2) Cautions on handling the product on which the HDD is mounted or the HDD as a repair part, and examples of dangerous handling

[Cautions on handling the product on which the HDD is mounted]

- While the unit is turned on, the HDD is always in operation. Be sure NOT to impart shock to the unit.

● Examples of dangerous handling: while the power is on

- Bumping on the bonnet
- Dropping an object, such as a small screwdriver or remote control unit, onto the bonnet, or bumping an object against the cabinet
- Moving the unit by dragging
- Stacking another product on the unit

Note: Be sure NOT to impart shock, such as bumping or hitting a screwdriver against the HDD, during diagnosis with the bonnet open.

● Examples of dangerous handling: while the power is off

- Imparting strong shock, although the HDD is more resistant to shock when the power is off
- Dropping the unit from a height of several centimeters, or after lifting one side of the unit up, then letting the unit drop.

- Do NOT move the unit immediately after the power is turned off. Wait at least 30 seconds after the indication on the FL display changed from POWER OFF to the clock indication before moving the unit.
  If the AC power cord is accidentally disconnected before turning the unit off, wait at least for one minute before moving it. In this case, damage to the HDD caused by sudden shutoff may be small, because the emergency relief mechanism is activated. However, if sudden shutoff occurrs during recording or playback, recorded data may be damaged. Be sure to check operations.

[Cautions on handling the HDD as a repair part]

1. Handle the HDD in a safe environment:
   - Handle the HDD over an antistatic pad that can also absorb shock.
   - Wear wrist bands to prevent electrostatic charges generated in your body from affecting the HDD.

2. The following must be observed when handling the HDD:
   - Handle one HDD at a time. Do NOT hold several HDDs at the same time.
   - Grip the HDD on both sides so that you do not touch its terminals or circuit boards.
   - Do NOT stack one HDD onto another HDD (even if the HDDs are protected in antistatic bags).
   - Do NOT bump the HDDs against one another.
   - Do NOT bump any tool, such as a screwdriver, or other hard object against the HDD.
   - When a repair part (HDD) is transported and there is a large temperature difference between outdoors and indoors, to the indoor, leave it in its package for about a half day to gradually cool or warm the HDD to room temperature before unpacking it.

[Notes on packing for shipment]

- When returning a defective HDD for analysis, handle with care as if it were a good product. Otherwise, the results of analysis may not be correct.
- When packing, use the antistatic bag and packing materials in which the repair part for service was delivered. Attach a copy of the slip for service or a memo stating symptoms in as much detail as possible.

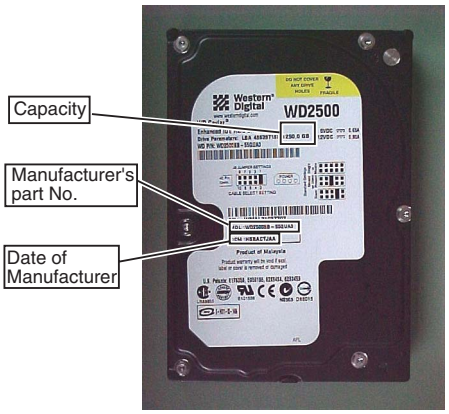
■ Outline and part No. of the HDDs

*Pioneer's part No. is not stamped.

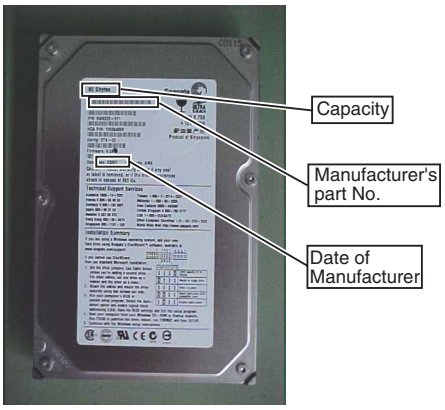
Model Name	Capacity	Western Digital		SEAGATE	
		Pioneer's Part No. (for service)	Manufacture's Part No.	Pioneer's Part No. (for service)	Manufacture's Part No.
DVR-530H-S DVR-530H-AV	160GB	VXF1047	WD1600BB	VXF1040	ST316002xACE
		VXF1068	WD1600BB	VXF1086	
DVR-630H-S	250GB	VXF1049	WD2500BB -xxGUAx	VXF1082	ST325082xACE
		VXF1072	WD2500BB -xxGUCx		

- When replacing the HDD, carefully check the capacity and manufacturer's part No. on the part label to avoid replacing with a similar but inappropriate product. You can also check the model No. of the mounted HDD on the Service mode screen.
- Do NOT use repair parts, such as commercially available HDDs, other than those designated above, as their functions, performance or reliability cannot be guaranteed.

Western Digital(160G, 250GB)

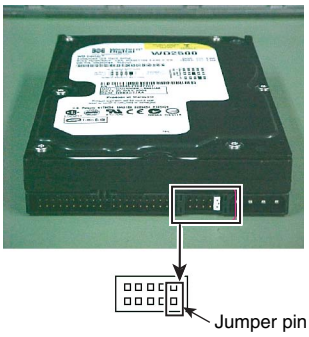


Seagate



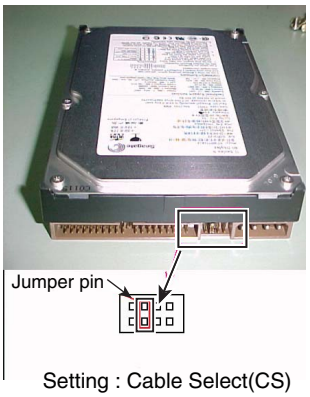
■ Confirmation of the jumper pin location of the HDD

Western Digital



Setting : Cable Select(CS)

Seagate



Setting : Cable Select(CS)

7.4 DISC/CONTENT FORMAT

Disc / content format playback compatibility

General disc compatibility

This recorder is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format–see below for further compatibility information.

DVD-Video **DVD-R** **DVD-RW**

Audio CD **Video CD** **CD-R** **CD-RW**

- Also compatible with KODAK Picture CD
- *is a trademark of DVD Format/Logo Licensing Corporation.*
- *is a trademark of Fuji Photo Film Co. Ltd.*

This recorder also supports the IECís Super VCD standard. Compared to the Video CD standard, Super VCD offers superior picture quality, and allows two soundtracks to be recorded. Super VCD also supports the widescreen size.

Super Video CD (Super VCD)

DVD-R/RW compatibility

This recorder will play and record DVD-R/RW discs.

Compatible media:

- DVD-RW Ver. 1.1, Ver. 1.1 / 2x, Ver. 1.2 / 2–4x and Ver. 1.2 / 2–6x
- DVD-R Ver. 2.0 and Ver. 2.0 / 4x / 8x / 16x, and Ver. 2.1 1–8x / 1–16x

Recording formats:

- DVD-R/RW: Video Recording (VR) format and DVD-Video format (Video mode)

Readable formats:

- DVD-R/RW: Video Recording (VR) format and DVD-Video format (Video mode)

Note that older models of DVD recorders and DVD writers may reject DVD-RW Ver. 1.2 discs and/or corrupt the data on the disc. If you want to share DVD-RW discs between this recorder and an older recorder/writer, we recommend using Ver. 1.1 discs.

CD-R/RW compatibility

This recorder cannot record CD-R or CD-RW discs.

- Readable formats: CD-Audio, Video CD/Super VCD, ISO 9660 CD-ROM* containing MP3, WMA or JPEG files
  * *ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible with this recorder.*
- Multi-session playback: Yes (except CD-Audio and Video CD/Super VCD)
- Unfinalized disc playback: CD-Audio only

Compressed audio compatibility

- Compatible media: CD-ROM, CD-R, CD-RW
- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA)

  Sampling rates: 44.1 or 48kHz
- Bit-rates: Any (128Kbps or higher recommended)
- Variable bit-rate (VBR) MP3 playback: Yes
- VBR WMA playback: No
- WMA encoder compatibility: Windows Media Codec 8 *(files encoded using Windows Media Codec 9 may be playable but some parts of the specification are not supported; specifically, Pro, Lossless, Voice and VBR)*
- DRM (Digital Rights Management) file playback: No (see also DRM in the *Glossary* on page 121)
- File extensions: .mp3, .wma (these must be used for the recorder to recognize MP3 and WMA files – do not use for other file types)
- File structure: Up to 99 folders / 999 files (if these limits are exceeded, only files and folders up to these limits are playable)

WMA (Windows Media Audio) compatibility

The Windows Media® logo printed on dicates that this recorder can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media® Player for Windows® XP, Windows Media® Player 9 or Windows Media® Player 10 series.

Microsoft, Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2* still image files
  **File format used by digital still cameras*
- Sampling ratio: 4:4:4, 4:2:2, 4:2:0
- Horizontal resolution: 160 – 5120 pixels
- Vertical resolution: 120 – 3840 pixels
- Progressive JPEG compatible: No
- File extensions: .jpg, .jpeg, .jif, .jfif (must be used for the recorder to recognize JPEG files – do not use for other file types)
- File structure: The recorder can load up to 99 folders / 999 files at one time *(if there are more files/folders that this on the disc then more can be reloaded)*

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

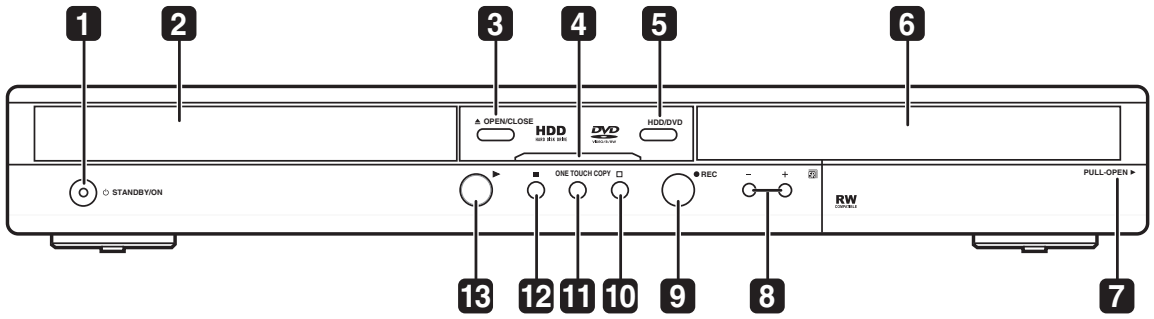
Discs recorded in packet write mode (UDF format) are not compatible with this recorder.

Check the DVD-R/RW or CD-R/RW software disc boxes for additional compatibility information.

8. PANEL FACILITIES

8.1 FRONT SECTION

Front panel



1 ⏻ STANDBY/ON
Press to switch the recorder on/into standby.

2 Disc tray

3 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

4 HDD/DVD indicator
Lights blue when the HDD is selected; orange when DVD is selected.

5 HDD/DVD
Press to switch between the hard disk drive (HDD) and DVD for recording and playback.

6 Front panel display and IR remote sensor

7 Front panel inputs
Pull the cover down where indicated to access the front panel input jacks (audio, video and DV). Especially convenient for connecting camcorders and other portable equipment.

8 +/–
Use to change channels, skip chapters/tracks, etc.

9 ● REC
Press to start recording. Press repeatedly to set the recording time in 30 minute blocks.

10 □
Press to stop recording.

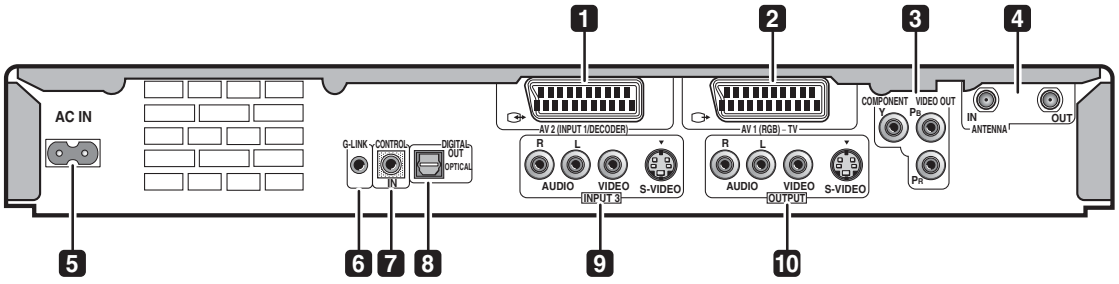
11 ONE TOUCH COPY
Press to start One Touch Copy of the currently playing title to DVD or the HDD. See also the *Note on copying*.

12 ■
Press to stop playback.

13 ►
Press to start or restart playback.

8.2 REAR PART

Rear panel connections



1 AV2(INPUT 1/DECODER) AV connector
Audio/video input/output SCART-type AV connector for connecting to a VCR, or other equipment with a SCART connector. The input accepts video, S-video and RGB. See *AV2/L1 In* for how to set this up.

2 AV1(RGB)-TV AV connector
Audio/video output SCART-type AV connector for connecting to a TV or other equipment with a SCART connector. The video output is switchable between video, S-video and RGB. See page *AV1 Out for how to set this up.*

3 COMPONENT VIDEO OUT
A high-quality video output for connecting to a TV or monitor with a component video input.

4 ANTENNA IN (RF IN)/OUT
Connect your TV antenna to the **ANTENNA IN (RF IN)** jack. The signal is passed through to the **ANTENNA OUT** jack for connection to your TV.

5 AC IN – Power inlet

6 G-LINK™
Use to connect the supplied G-LINK™ cable to enable GUIDE Plus+® to control an external satellite receiver, etc.

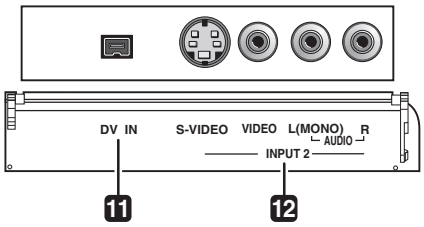
7 CONTROL IN
Use to control this recorder from the remote sensor of another Pioneer component with a **CONTROL OUT** terminal and bearing the Pioneer 5R mark. Connect the **CONTROL OUT** of the other component to the **CONTROL IN** of this recorder using a mini-plug cord.

8 DIGITAL AUDIO OUT
Optical digital audio jack for connecting to an AV amplifier/receiver, Dolby Digital/DTS/MPEG decoder or other equipment with a digital input.

9 INPUT 3
Stereo analog audio, video and S-video inputs for connection to a VCR or other source component.

10 OUTPUT
Stereo analog audio, video and S-video outputs for connection to a TV or AV amplifier/receiver.

Front panel connections



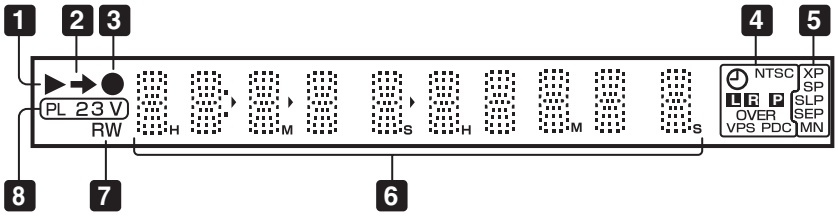
On the right side of the front panel a flip-down cover hides more connections.

11 DV IN
A DV input i.LINK connector, suitable for connecting a DV camcorder.

12 Audio/video input 2
Audio/video input (stereo analog audio; composite and S-video video), especially suitable for camcorders, game consoles, portable audio, etc.

8.3 DISPLAY

Display



1 ▶
Lights during playback; blinks when playback is paused.

2 →
Lights when copying.

3 ●
Lights during recording; blinks when recording is paused.

4 ⏲
Lights when a timer recording has been set. (Indicator blinks if the timer has been set to DVD but there isn't a recordable disc loaded, or the timer has been set to HDD but the HDD is not recordable.)

NTSC
Lights when playing NTSC format video.

L R
Indicates which channels of a bilingual broadcast are recorded.

P
Lights when the component video output is set to progressive scan.

OVER
Lights when the analog audio input level is too high.

VPS / PDC
Lights when receiving a VPS/PDC broadcast during a VPS/PDC-enabled timer recording.

5 Recording quality indicators

XP
Lights when the recording mode is set to **XP** (best quality).

SP
Lights when the recording mode is set to **SP** (standard play).

LP / SLP
Lights when the recording mode is set to **LP** (long play) or **SLP** (super long play).

EP / SEP
Lights when the recording mode is set to **EP** (extended play) or **SEP** (super extended play).

MN
Lights when the recording mode is set to **MN** (manual recording level) mode.

6 Character display

7 R / RW
Indicates the type of recordable DVD loaded: DVD-R or DVD-RW.

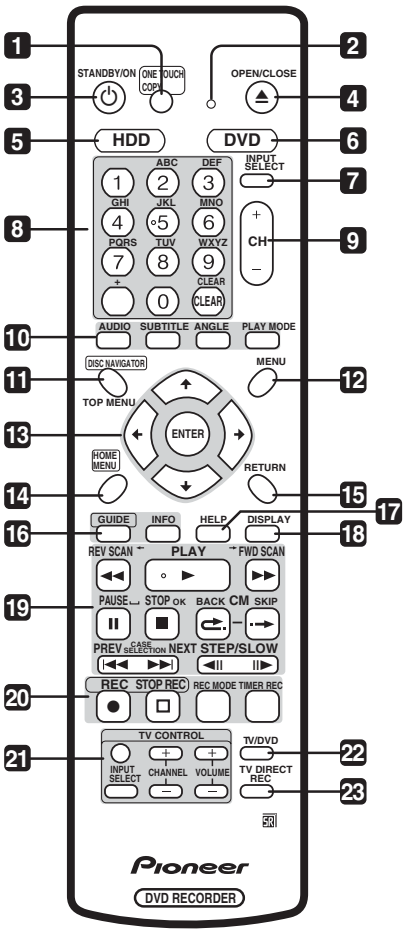
8 PL
Lights when a VR mode disc is loaded and the recorder is in Play List mode.

2 3
Shows the remote control mode (if nothing is displayed, the remote control mode is 1).

V
Lights when an unfinalized Video mode disc is loaded.

8.4 REMOTE CONTROL

Remote control



1 ONE TOUCH COPY
Press to start One Touch Copy of the currently playing title to DVD or the HDD.

2 Remote control indicator
Lights when setting up the remote control for use with a TV and when setting the remote control mode

3 ⏻ STANDBY/ON
Press to switch the recorder on/into standby.

4 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

5 HDD
Press to select the hard disk (HDD) for recording or playback.

6 DVD
Press to select the DVD for recording or playback.

7 INPUT SELECT
Press to change the input to use for recording.

8 Alphanumeric buttons, + and CLEAR
Use the number buttons for track/chapter/title selection; channel selection, and so on. The same buttons can also be used to enter names for titles, discs and so on.

Use the + button to enter non-alphanumeric characters and symbols.

Use **CLEAR** to clear an entry and start again.

9 CH +/–
Press to change the channel of the built-in TV tuner.

10 GUIDE Plus+®Action buttons and DVD playback functions

When in the GUIDE Plus+® system, these buttons act as the Red, Green, Yellow and Blue Action buttons (the functions of these buttons change according to the GUIDE Plus+® Area.

AUDIO
Changes the audio language or channel. (When the recorder is stopped, press to change the tuner audio.)

SUBTITLE
Displays/changes the subtitles included in multilingual DVD-Video discs.

ANGLE
Switches camera angles on discs with multi-angle scenes.

PLAY MODE
Press to display the Play Mode menu (for features such as search, repeat and program play).

11 DISC NAVIGATOR / TOP MENU

Press to display the Disc Navigator screen, or the top menu if a DVD-Video disc is loaded.

12 MENU
Press to display the disc menu if a DVD-Video disc is loaded.

When in the GUIDE Plus+® system, use to jump directly to the Menu bar.

13 ⬆/⬇/⬅/➡ and ENTER
Used to navigate all on-screen displays. Press **ENTER** to select the currently highlighted option.

14 HOME MENU
Press to display the Home Menu, from which you can navigate all the functions of the recorder.

15 RETURN
Press to go back one level in the on-screen menu or display.

16 GUIDE Plus+® system controls

GUIDE
Press to display the GUIDE Plus+® screen; press again to exit.

INFO
Press to see additional information for the highlighted item in GUIDE Plus+®.

17 HELP
Press for help on how to use the current GUI screen

18 DISPLAY
Displays/changes the on-screen information displays.

19 Playback controls

◄◄ REV SCAN / FWD SCAN ►►
Press to start reverse or forward scanning. Press again to change the speed.

► PLAY
Press to start playback.

II PAUSE
Press to pause playback or recording.

■ STOP
Press to stop playback.

CM BACK (commercial back)
Press repeatedly to skip progressively backward through the audio or video playing.

CM SKIP (commercial skip)
Press repeatedly to skip progressively forward through the audio or video playing.

I◄◄ PREV / NEXT ►►I
Press to skip to the previous or next title/chapter/track/folder; or to display the previous or next menu page.

When GUIDE Plus+® is displayed, use to display the previous/next page.

◄II STEP/SLOW I►
During playback, press to start slow-motion playback; while paused, press to show the previous or next video frame.

When GUIDE Plus+® is displayed, use to display the previous/next day.

20 Recording controls

● REC
Press to start recording. Press repeatedly to set the recording time in blocks of 30 mins.

□ STOP REC
Press to stop recording.

REC MODE
Press repeatedly to change the recording mode (picture quality).

TIMER REC
Press to set a timer recording from the GUIDE Plus+® system.

21 TV CONTROL
After setting up, use these controls to control your TV.

22 TV/DVD
Press to switch between 'TV mode', in which you get the picture and sound from the TVís tuner, and 'DVD mode', in which you get picture and sound from the recorderís tuner (or an external input).

23 TV DIRECT REC
Press to start recording whatever channel your TV is set to.

A

B

C

D

E

F

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
DVD Recorder Data Disc	GGV1239 (*)	diagnosis (ID data setting)
Flexible Cable (28P)	GGD1437	diagnosis of MAIN Assy
ATA cable	GGD1284	Extension of HDD
4P Power Cable	VKP2291	Extension of HDD
Extension Board (A)(B)	GGF1532	diagnosis of MAIN Assy
Emergency Disc Ejection Rod	GGF1529	Forced ejection of the Disc
Acetate Tape	GYH1001	Performance keeping of DRIVE Assy

(*) GGV 1239 wii be available on June 2005.
For servicing until June 2005, use GGV1179 disc.

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008